AMERICAN GAS JOURNAL

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THERE ARE NO PRIORITIES ON PROGRESSIVE THINKING!

IN times of emergency, such as these, there is little incentive or opportunity for the average manufacturer to develop new lines or to build improvements into existing products. Unprecedented wartime demands are not conducive to immediate progress within the equipment industry. But there is the opportunity for some good solid thinking on what can be done when the emergency is over.

The Engineering, Research and Development Departments of the Pittsburgh Equitable Meter Company and Merco Nordstrom Valve Company are thinking ahead of the times. On the drawing boards new designs are taking form. In the laboratories, experimental models are being put through their paces. Scarcity of materials and priority controls will prevent the immediate introduction of these developments. But *there are no priorities on progressive thinking.* With the ultimate return to normal, the results of today's research will be apparent in tomorrow's equipment.

The EMCO-Nordstrom organization, with its unexcelled facilities for research and development, including fellowships at a world renowned scientific institute, is contributing valuable aids to the Nation's war efforts.

In peace or at war, continuous research goes forward to assure that the technical developments of the future, be they designs, materials or methods, will be incorporated in EMCO Gas Meters and Regulators and Nordstrom Lubricated Plug Valves.

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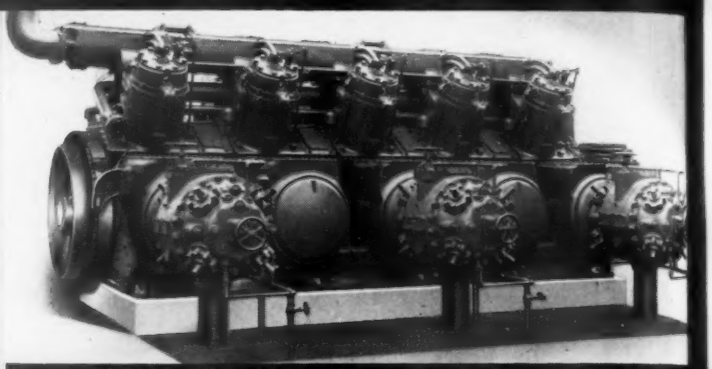
EMCO METERS AND REGULATORS · NORDSTROM LUBRICATED PLUG VALVES

Which Compressor ? ? ? ? ? ? ? ?

Type G-MV compressors are for you who want rugged, gas-engine-driven units that are compact and flexible, easy to transport and install, require minimum housing and foundation materials . . . 400 to 1,000 horsepower.

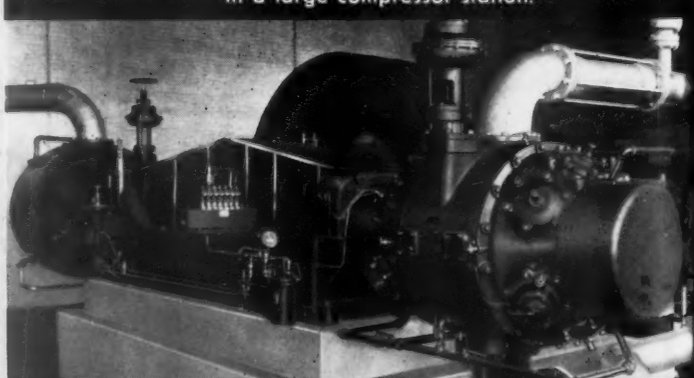


A 1,000-hp Type G-MV Compressor in Cities Service Gas Company's station at Pampa, Texas.

If you want the simplicity and dependability of slow-speed horizontals, there's a complete line of Cooper-Bessemer engine-driven horizontal compressors . . . 125 to 1,500 horsepower.

Nine, 1,500-hp, horizontal, engine-driven compressors in a large compressor station.

If your operations and experience dictate motor-driven compressors, there are C-B horizontal, motor-driven units of up to 3,000 horsepower.



A modern 500-hp motor-driven compressor unit in an Eastern plant.

Let Cooper-Bessemer engineers help you select the right compressors for your plant.

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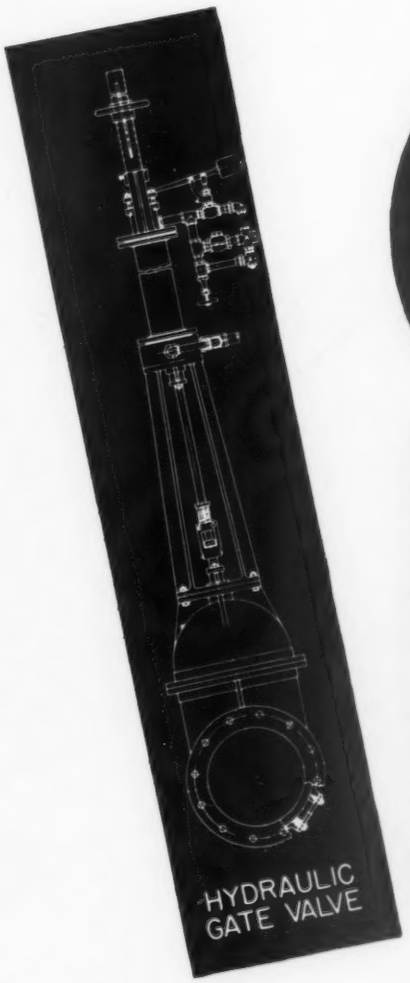
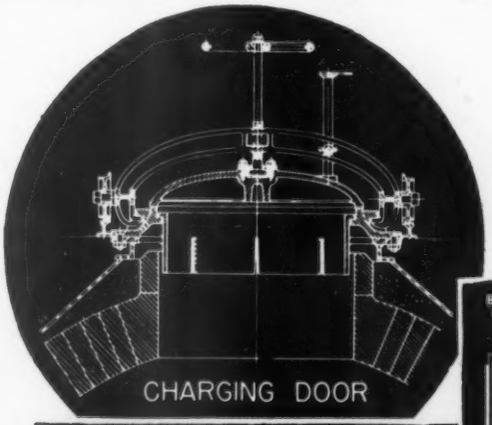
NEED EXTRA CAPACITY?

SPEED UP

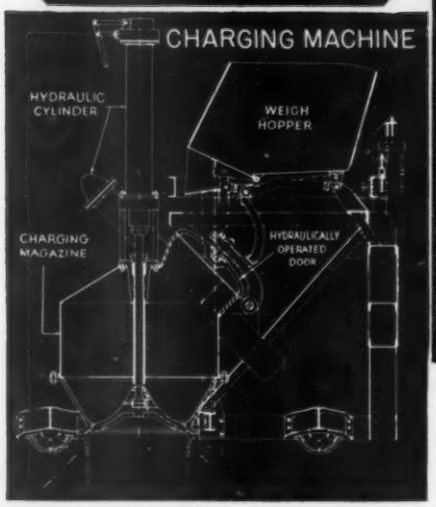
WITH THESE MODERN, EFFICIENT SEMET-SOLVAY PARTS



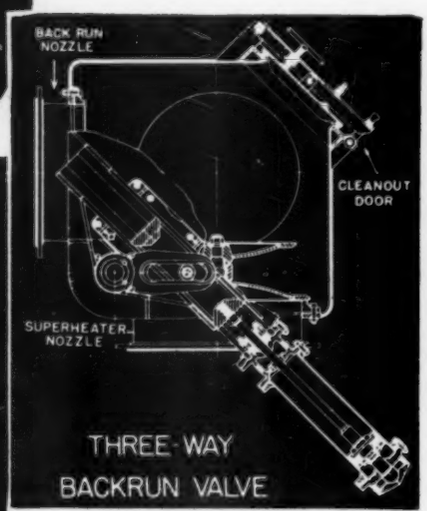
Hydraulic Gate Valve, with automatic stop, permitting opening to any desired degree. Creeper control governs rate of opening.



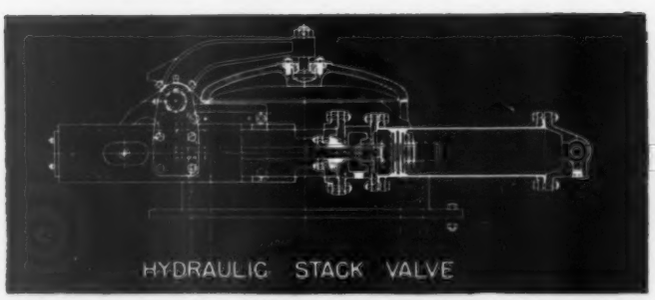
Charging Door. Rolling type allowing unhampered work around charging hole.



Charging Machine. Automatically controlled throughout. Distributes fuel evenly. Built in weigh scale. Cushioned seating for charging door.



3-Way Backrun Valves. Very fast in action. Interior easily accessible. Spray system for reducing carbon and tar accumulation when running on heavy oil.



Hydraulic Stack Valve. Quick acting. Cushioned Seating held tight by hydraulic pressure. Easily accessible for maintenance.

SEMET-SOLVAY ENGINEERING CORPORATION

40 Rector Street **New York, N. Y.**

AMERICAN GAS JOURNAL, June, 1942. Vol. 156, No. 6. Published monthly by American Gas Journal, Inc., at 34 North Crystal St., East Stroudsburg, Pa. Executive and Editorial offices at 53 Park Place, New York, N. Y. Entered as second-class matter, October 7, 1928, at the post-office at East Stroudsburg, Pa., under the Act of March 3, 1879. Printed in U. S. A.

Telling housewives about

THE SATURDAY EVENING POST
What every housewife should know about preparing
WAR FARE
GAS COMPANIES, in cooperation with the National Nutrition Program, offer you the skilled advice of their home service experts in the planning, preservation, and cooking of foods that make US strong.
▶ Almost overnight, home making has become a war industry. Building stronger Americans—stronger men and women, boys and girls—is the job.
And homes, like industrial plants, are making adjustments to meet the demands of these critical times. As never before, the modern knowledge of nutrition and food care is being brought into play to help provide more healthful, energy-producing meals.
In Gas Companies everywhere, home service experts are aiding housewives in acquiring the new skills required by their wartime assignment.
These experienced home economists, who in the past have helpfully served the users of domestic gas service for cooking and refrigeration, are now volunteering their services in support of the National Nutrition Program of the Office of Defense, Health and Welfare.
Visit your Gas Company today. Consult the Home Service Representative for latest information and literature on the government's Nutrition Program. She'll show you how to feed your family better and more economically—show you, too, how to make the most of your household appliances.
This advertisement contributed by Servel, Inc., makers of Servel Electrolux Gas Refrigerators, in the interest of the National Nutrition Program.
TO THE 2,000,000 OWNERS OF SERVEL GAS REFRIGERATORS . . .
The makers of Servel urge your active cooperation of the National Nutrition Program, described in the June issues of The Saturday Evening Post by Paul V. McNutt, Director of the Office of Defense, Health and Welfare.
Because of the qualities of your Servel, you can be sure that you will have the benefits of modern automatic refrigeration for the duration in serving foods that keep us fit.
SERVEL, Inc.
Makers of the Refrigerator That "Stays Silent . . . Lasts Longer"

wartime nutrition service that Gas Companies are now offering

Watch for this advertisement. It's scheduled for the June 13 issue of The Saturday Evening Post to tie in with the important, authoritative story on the National Nutrition Program by Paul V. McNutt, Director of the Office of Defense, Health and Welfare.

GAS COMPANIES ALL OVER THE COUNTRY are performing a valuable wartime service through their wholehearted support of the government's Nutrition Program. The work they are doing is important, not only to the health and welfare of our people, but also to the winning of the war itself.

We of Servel feel that this service is *so* important—in building *stronger* Americans, *stronger* men and women, boys and girls—that we're telling families everywhere about it.

The advertisement on the opposite page, which appears in The Saturday Evening Post during June, urges housewives to make the most of the expert home service advice their Gas Company is offering in the planning, preservation and cooking of foods that keep US fit.

"Home Volunteer" Program Ready

And to further aid Gas Companies in enlisting fullest cooperation of housewives in nutrition and conservation, Servel has developed a comprehensive "Home Volunteer" Program.

By this plan, your customers enroll as "Home Volunteers" and sign a Consumer Victory Pledge. This entitles them to up-to-the-minute booklets on food-buying, meal-planning, and the care of appliances—booklets which Servel has prepared with the help of the Office of Defense, Health and Welfare Services, and the Consumer Division, Office of Price Administration.

In addition, to stimulate local enthusiasm in this program, Servel offers you newspaper advertisements, radio scripts, display material and other promotional helps.

Today, plan to take advantage of the "Home Volunteer" Program. Put it to work creating interest in this important phase of America's war effort. It will help to keep your name before the public, enable you to bring to your customers' attention the qualities of the Gas Refrigerator and other Gas Appliances.

Stays silent...lasts longer
SERVEL
ELECTROLUX
GAS
REFRIGERATOR

WINS GOOD WILL FOR GAS AND GAS SERVICE

Dear Pop:

Even an old Rainbow Divisioner like you would pop your eyes at the army we're putting together this time. Let me tell you, they're doing everything to make up just about the best bunch of fighting galoots you ever saw.

And that goes for what they do for us off duty, too! Take this new clubhouse we got just outside of camp. It's got radios, dance floors, nice soft chairs and everything. And, Pop, you can get something to eat that won't cost you a month's pay!

Now, the army isn't running this. The USO is. And most of the other camps got USO clubs too, because you and a lot of other folks dug down and gave the money to the USO last year.

But, Pop, you know what's happened since then. Guys've been streaming into uniform. Last year there was less than 2 million of us. This year there'll be 4 million. And the USO needs a lot more dough to serve that many men—around 32,000,000 bucks I hear.

Now, Pop, I know you upped with what you could last time. But it would sure be swell if you could dig into the old sock again. Maybe you could get some of the other folks in the neighborhood steamed up, too.

It will mean an awful lot to the fellows in camp all over the country. Sort of show 'em the home-folks are backing them up. And, Pop, an old soldier like you knows that's a mighty nice feeling for a fellow to have. See what you can do, huh, Pop?

Bill

GIVE TO THE USO

Send your contribution to your local USO Committee or to National Headquarters, USO, Empire State Building, New York, N. Y.

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NUMBER 6

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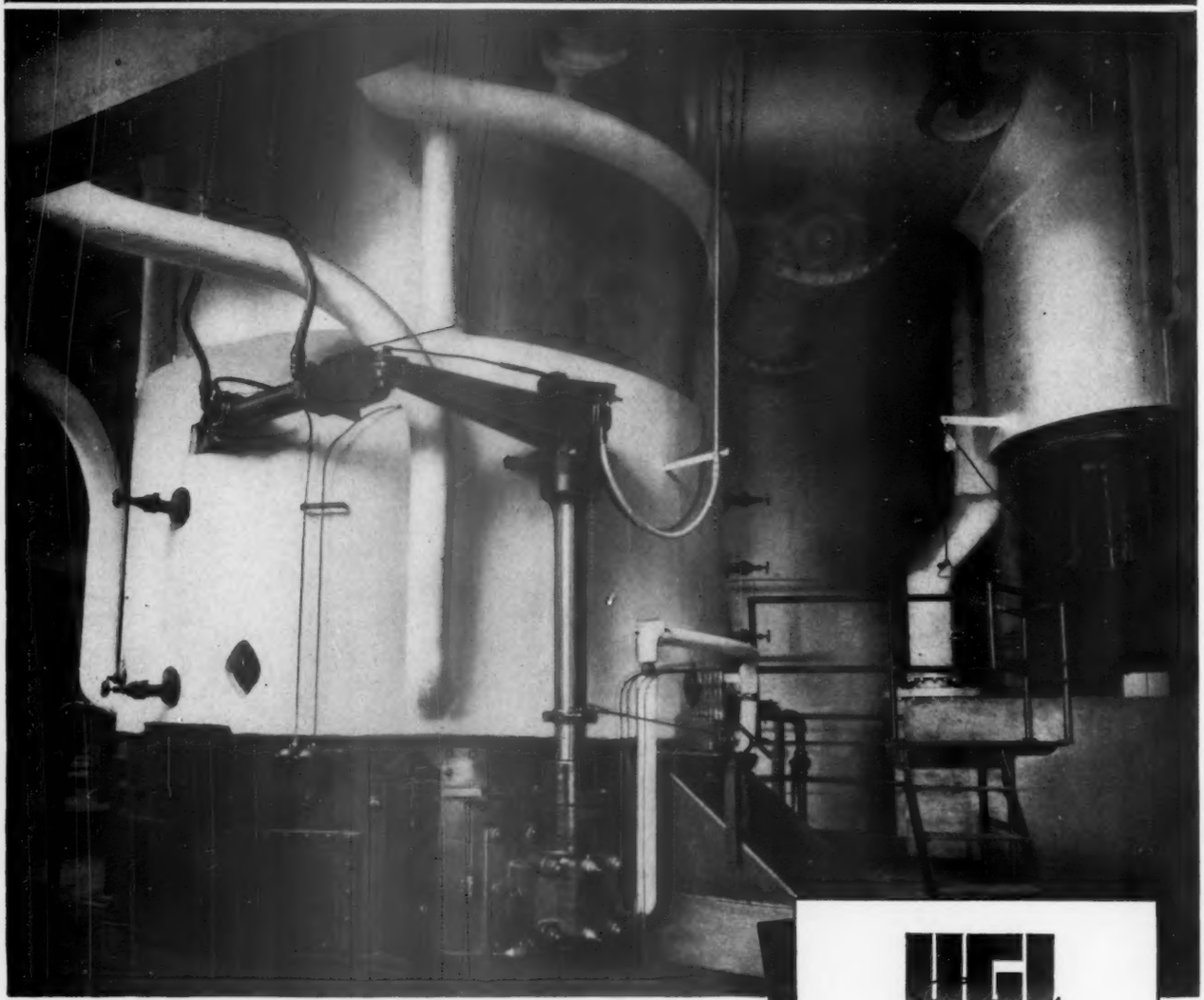
U.G.I. MODEL "D" MECHANICAL GENERATOR



Model "D" is the latest development of the U.G.I. Mechanical Generator. Four U.G.I. Model "D" Mechanical Generators are now in operation. The operating features and advantages of the Model "B"—of which 65 are installed or under construction—have been retained.

The design of the bottom construction has been simplified. A ratchet drive, actuated by high pressure oil through a hydraulic cylinder, provides the motive power for the rotation of the grate.

The tuyere for admission of air and steam, the water jacket, rotating sectional ash pan and method of ash extraction which largely account for the success of Model "B" are incorporated in Model "D" without change.

U.G.I. Equipment

UNITED SERVICES PROVIDE

EXPERIENCE IN DESIGN
United has over 50 years experience in gas plant design.

EFFICIENT APPARATUS
United has pioneered major developments in water and coal gas production.

ECONOMICAL CONSTRUCTION
United has large well organized forces for gas plant and general construction work.

EXPERIENCE IN OPERATION
United has experienced plant operators for securing most efficient results.

UNITED ENGINEERS & CONSTRUCTORS INC

NEW YORK PHILADELPHIA CHICAGO

JUNE
1942

AMERICAN
GAS JOURNAL

VOLUME 156
NO. 6

New Water-Sealed Gas Holder Has Concrete Water-Sealing Tank

By
Fred A. Herr

FIG. 1—Taken during progress of construction of the Southern California Gas Co.'s new $750,000 water-sealed gas tank at Los Angeles this photograph shows the steel reinforcing of the concrete wall of the lower section being put into place. The truncated cone in center has a diameter of 180 feet. FIG. 2—Inner form for lower section.

THE Southern California Gas Co. in March completed construction on a new low-pressure water-sealed gas holder of 10,000,000 cubic feet capacity costing $750,000.

In addition to being the first low-pressure, water-sealed holder installed in the Los Angeles area during the past 18 years, it is of note for some unusual features in the design of the concrete water-sealing tank which constitutes the lower part of the structure.

The new tank is located at Macy and Lyon Sts., about 12 blocks northeast of the company's downtown headquarters building. A reinforced concrete tank measuring 274 ft., 4 in., in diameter and 38 ft. in depth serves as the foundation and water seal for a steel gas holder with a 190 ft. 7 in. high framework.

Construction on the project was started many months before the United States entered the war (ground was broken in June, 1941). While the holder contains some 2,000 tons of steel, all material had been contracted for in 1941 and was not affected or delayed by later war-imposed restrictions on materials.

The speeding up of America's preparedness program in 1941, however, was a factor which influenced the type of tank to be built. A contributing factor in the ultimate choice of a low-pressure tank was the company's realization early in 1941 that the chances of obtaining steel plate of a kind necessary for a high-pressure tank would become increasingly more difficult as demands for that material from shipyards and defense plants increased. It had also been found that ample surplus compressor

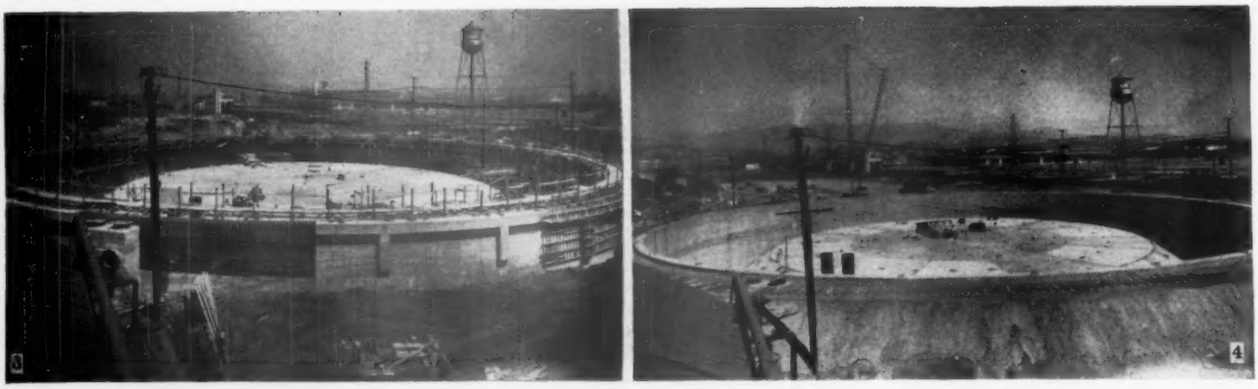


FIG. 3—Sections of the lower concrete tank were poured alternately, one section being permitted to cure for seven days before another was poured. FIG. 4.—Sealed tank complete, surrounded by a 10-foot high earthen berm. The narrow gauge railway which was installed on top of the berm while tank construction was underway expedited the handling of steel for the holder. A steel holder erected on this foundation has a capacity of 10,000,000 cubic feet of gas; a height of nearly 200 feet.

capacity would be available from the company's existing Ducommun compressor station.

The somewhat higher cost of a reinforced concrete water seal tank as compared with a steel tank, it was decided, would be offset by the fact that reinforcing steel was readily available at that time so that construction could move forward without delay.

Soil Tests Made

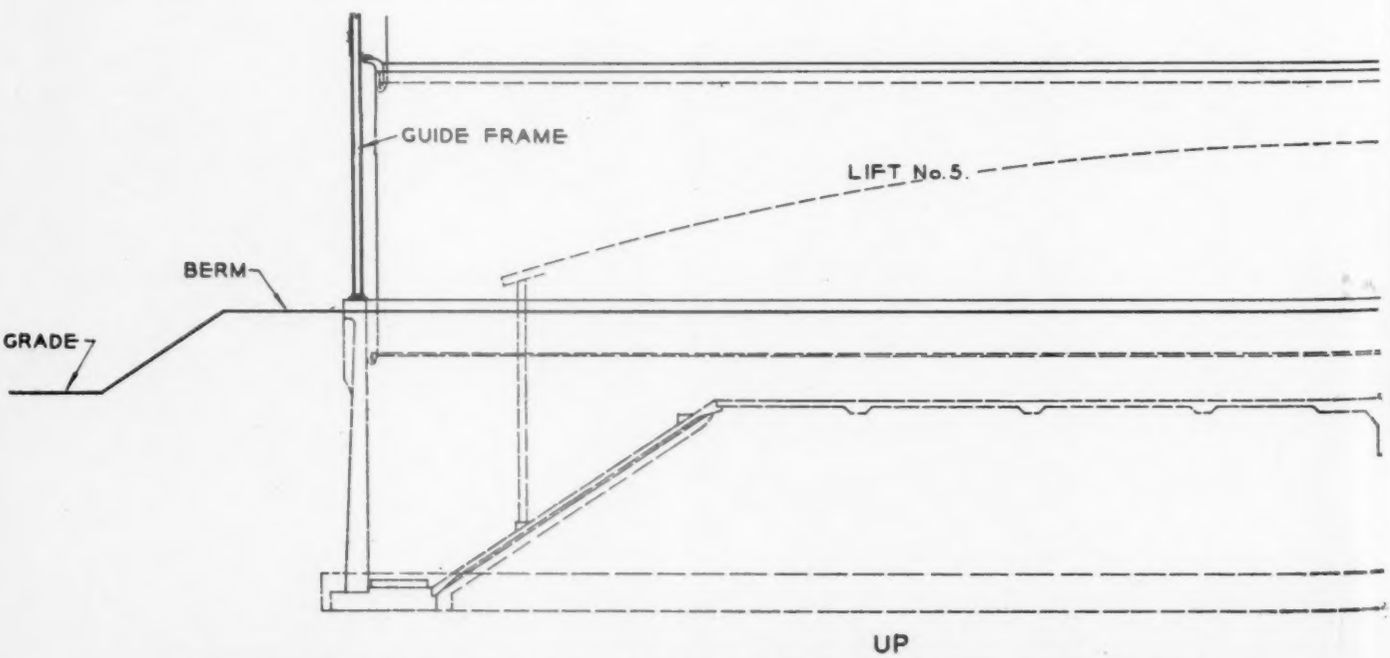
Indicative of the careful planning of the job, before work on the design of the tank was started, extensive tests of the bearing capacity of the soil were made. Cores of the soil formation were extracted at several layers from test holes driven down 60 feet below the surface. The soil tests were considered necessary for two reasons: the weight which was to be borne by the under-structure; and earthquake provisions.

The rimwalls of the circular tank reach 26 feet below the ground level. A circular bevel-sided mound of earth resembling a truncated cone 180 feet in diameter at the top was left in the center of the area enclosed by the concrete wall. The cone slopes upward from the bottom of the wall at the rate of 1½ horizontal to 1 vertical to the level of the ground surface beyond the wall. Sides and top of the cone are covered with six inches of concrete.

The circular wall, entirely of reinforced concrete, tapers from a base thickness of three feet. It rests on a continuous footing 14 feet wide by 3 feet thick. The wall is surrounded by a berm 10 feet high and 16 feet wide at the top, which slopes at a 40 degree angle to the street grade. Part of the excess excavated material was used in the construction of this earthen berm. During construction of the steel holder, the berm carried a railroad track to expedite handling of material and equipment.

Built In Sections

The circular concrete wall is built in 14 sections each of three tiers.



SECTION THRU GAS STORAGE HOLDER—5 LIFTS—CONCRETE WATER TANK

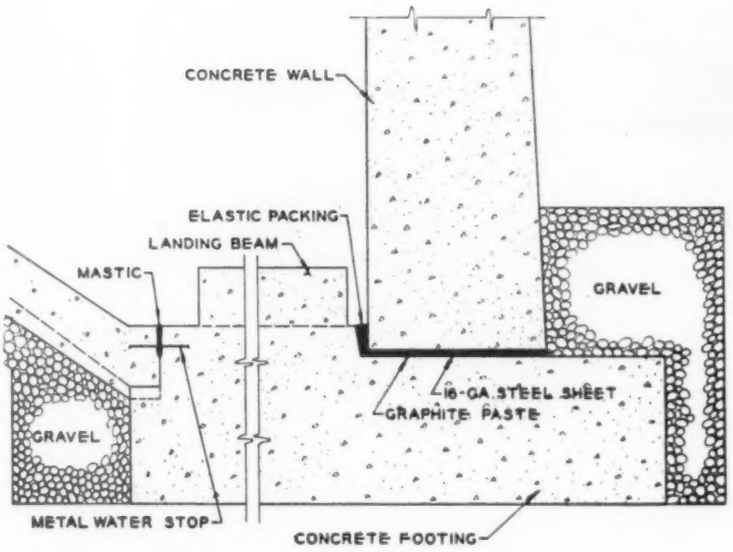
Concrete was poured in alternate sections, one section being allowed to cure for seven days before an adjoining section was poured. This provision was included in the specifications in order to minimize stresses caused by shrinkage.

Part of the construction detail involved the building of a complete inside wall-form one tier high, which was raised successively for the second and third tiers. This inner form served as a rigid support for the reinforcing steel which was used in large amounts because of the high bursting pressure—600,000 lbs. per vertical foot.

Sliding Joint

A sliding joint installed at the base of the concrete wall is one of the notable features of the tank's design. Placed between the base of the wall and the footing, the function of the sliding joint is to permit the concrete wall to act independent of other parts of the structure at such times as external or internal forces are applied.

A sheet of 16-gauge galvanized sheet iron, coated on both sides with graphite paste, is installed to form the sliding joint at the point where the wall meets the footing. The paste has a two-fold purpose: Its lubricant qualities facilitate movement at the joint, in addition to which it provides a protective coating for the galvanized sheeting and a seal against the escape of water. Additional leakage preventatives are in the form of elastic packing in recesses between the inner side of the concrete wall and the landing beam of the holder frame work, and metal water stops and resilient mastic along the inside of the tank.



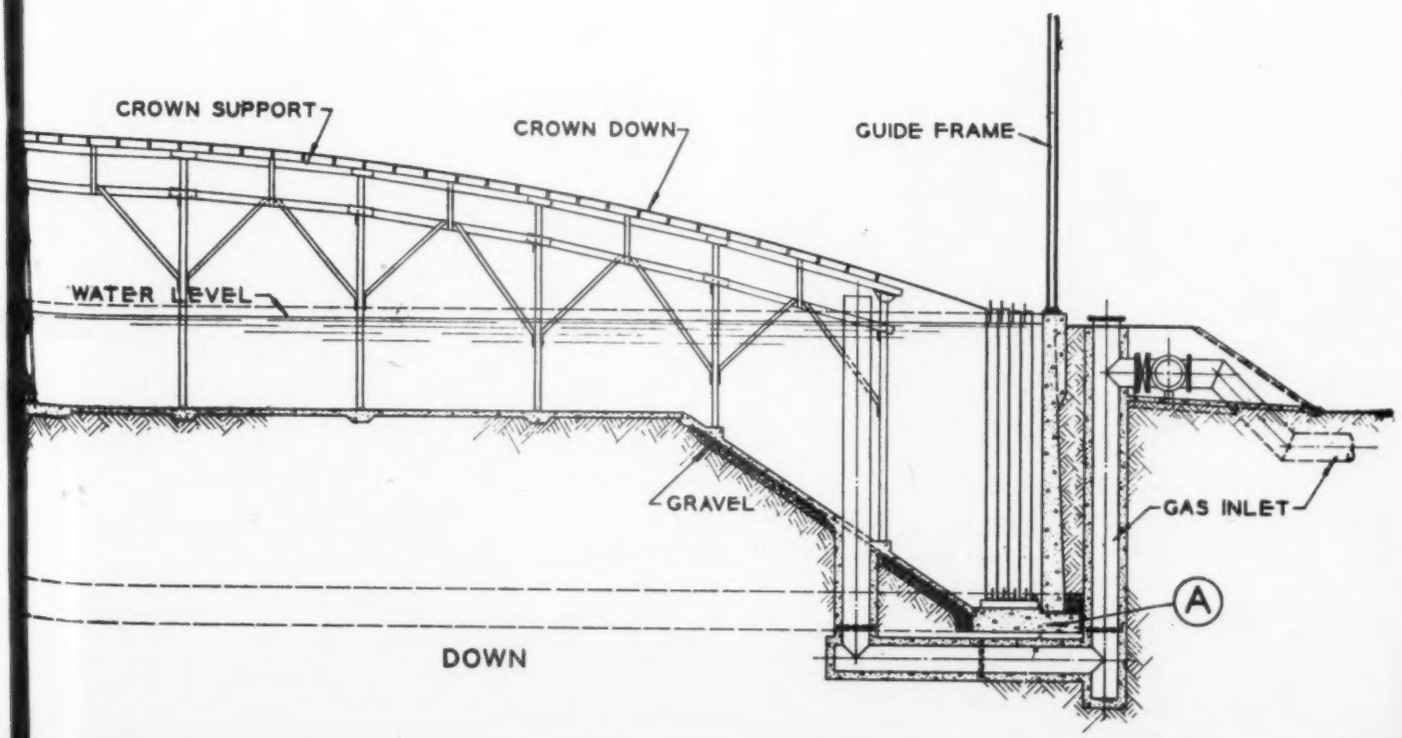
TYPICAL DETAIL BETWEEN WALL AND FOOTING (A)

Copper Water Seal

Copper water seals are used in the construction joints of the 92 sections into which the structure is divided.

The steel holder is of conventional design. It is of both welded and riveted construction. The holder rises in five lifts. Two inlet pipes are each 42 inches in diameter. Cost of the water-sealing tank is estimated at $200,000, and of the steel holder, $550,000.

The supervising engineer was R. G. Rollow, chief engineer of the Southern California Gas Co. The Ford Twaits Co., Los Angeles, was the general contractor. The steel holder was erected by Koppers Co., Bartlett-Hayward Division, Baltimore, Md.



37th Annual Natural Gas Convention and 19th Annual Distribution Conference American Gas Association

J. French Robinson
Chairman, Natural Gas
Section A.G.A.

THE 37th Annual Natural Gas Convention and the 19th Annual Distribution Conference of the A. G. A. met in New Orleans May 5th to 7th. The Natural Gas meeting was at the Roosevelt Hotel and the Distribution Conference at the St. Charles Hotel. Joint General Sessions were held on Tuesday and Wednesday in the morning. Sectional meetings were as follows: Transmission Conference Monday and Tuesday; Production Conference, Monday; Industrial and Sales Conference, Monday; Residential Gas Sales Conference, Tuesday and Wednesday; Accident Prevention Conference, Monday; Accounting Conference, Tuesday and Wednesday.

How all branches of the natural gas industry share responsibilities of war supply was emphasized in the meetings.

J. French Robinson, Chairman, Natural Gas Section, A. G. A. and President of the East Ohio Gas Company, Cleveland, Ohio, presided at the General Session on Tuesday morning. After a welcoming address by Albert B. Patterson, President, New Orleans Public Service, Inc., C. S. Goldsmith, Chairman, Distribution Committee, Technical Section, A. G. A., and Asst. Engineer of Distribution, The Brooklyn Union Gas Co., presented a paper entitled, "Keeping Up With Gas Distribution Problems." He outlined the many new problems the war has created, including the safeguarding of mains, valves, governors, etc., against sabotage, the setting up of plans to cope with the effects of bombing raids, if and when they occur, the changes that will have to be made to enable us to carry on our operations with a drastic curtailment in the use of automotive equipment, and the almost certain loss of hundreds of employees on account of the Selective Service Act.

Other papers presented at this Session were "Whither Are We Going?" J. French Robinson, Chairman; "Solvency Is a Challenge to the Gas Industry," by Allan W. Lundstrum, Ebasco Services, Inc.; and "Natural Gas Financing Today for a Solvent Tomorrow," by Edward L. Love, Vice-President, Chase National Bank, New York, N. Y. The Honorable Gung-Hsing Wang, Vice Consul of China, New Orleans, gave a very interesting talk on the subject of "Toward Ultimate Victory."

The General session Meeting on Wednesday was presided over by Burt R. Bay, Vice-Chairman, Natural Gas Section, A. G. A., and President, Northern Natural Gas Company, Omaha.

The Gas Industry Dinner held Wednesday evening at the Roosevelt was presided over by Mr. Robinson. The guest of honor was the Honorable Harold L. Ickes, Secretary of the Interior and Petroleum Coordinator for National Defense. His address appears elsewhere in this issue.

George S. Hawley, President, American Gas Association and President, The Bridgeport Gas Light Company, Bridgeport, Conn., who spoke at the dinner stated:

"Step by step through the armament period, the lend-lease and the introduction and application of priorities, the Association concentrated its attention on activities directly related to the war effort." In closing, he quoted from the address of the late George B. Cortelyou on the occasion of his accepting the office of first president of the American Gas Association in 1918,—a year when this country was throwing its all into the winning of World War I.

"There is one thought," said Mr. Cortelyou, "that overshadows all others in this meeting, in any gath-

Groups at the Convention:—On the left, L. to R.: G. W. Martin, Dallas Gas Company, Dallas, Texas; Russell H. Coe, Pipe Line Service Corp., Glenwillard, Pa.; A. C. Cherry, Cincinnati Gas & Electric Co., Cincinnati, Ohio; A. G. Ford, Western United Gas & Electric Co., Aurora, Illinois.

On the right, L. to R: T. H. Kendall, Chairman, Subcommittee on Construction and Maintenance, Equitable Gas Co., Pittsburgh, Pa.; H. L. Gaidry, Chairman, Technical Section, New Orleans, La.; James F. Pollard, President, Seattle Gas Co., Seattle, Wash.

Photos A. Gordon King

Burt R. Bay, Vice-Chairman, Natural Gas Section, A.G.A.

ering of Americans anywhere,—How can we best serve the nation in this momentous hour of history? I answer for you, as the first official announcement of this Association and as voicing the spirit in which we today assume our new responsibilities. From the beginning of the world conflict, the gas industry has put its forces and its facilities at the call of the government without selfish purpose or expectation of gain. It has already rendered incalculable service as the official records at Washington will attest. It will continue to do so."

At the Natural Gas Industry Conference held Thursday morning, Robert E. Allen, assistant deputy coordinator, Office of Petroleum Coordinator for National Defense, stated:

"Let me briefly review the responsibilities which the Natural Gas and Natural Gasoline Division must assume. This division must concern itself with the problems involved in the production of natural gas. It must be ready to handle problems relating to obtaining and utilizing critical materials in the production and gathering of natural gas. It must also concern itself with formulating, in cooperation with the industry, plans and programs designed to assure the discovery and production of an adequate quantity of natural gas.

"This division must concern itself with the transportation and distribution of natural gas. In this connection, it must not only work with the industry in an over-all effort to assure the maintenance of adequate transportation and distribution facilities, but must also cooperate with other federal agencies in solving transportation and distribution problems which are within the jurisdiction of those other federal agencies."

Luncheon Conference

Nearly all of the sections held luncheon conferences. This type of get-together meeting has become very popular for it permits the men interested in one particular phase of the industry to exchange information of benefit to them all.

The Gas Industry Luncheon was held on Tuesday and was presided over by Mr. Robinson, Chairman, Natural Gas Section, A. G. A. Major Alexander Forward, Managing Director, American Gas Association talked on the subject, "On the Washington Front," and outlined the various activities of the Association in connection with the war activities in Washington. At this point, Miss Mildred Clark, Home Service Director, Oklahoma Natural Gas Company, Tulsa, took the chair and outlined the many activities of the Home Service Program. In view of the prominence the government is giving to the matter of diet and nutrition, the home service departments of the various gas companies are doing an important job in this connection. J. Ernestine Becker, Johns Hopkins University, Baltimore, told the gathering all about calories and gave several well balanced menus for the three meals a day.

Mildred R. Clark

Production Conference

Meetings were held Monday morning and afternoon and were presided over by C. U. Daniels, Chairman, Production Committee, Natural Gas Section. The morning session was devoted to a symposium on Drilling and Completion in High Pressure Areas. Brief papers were presented by H. H. Ross, Gas Producing Company of Ohio, Newark; Frank E. Kendrick, Lone Star Gas Company, Dallas; C. A. Sullins, Union Producing Company, Shreveport; Arnold F. Parr, Oklahoma Natural Gas Company, Tulsa, Okla.; and John O. Farmer, Otis Pressure Control, Inc., Dallas.

The afternoon session was devoted to a symposium on Proper Production Methods. Discussions were led by R. O. Garrett, Arkansas Louisiana Gas Company, Shreveport; C. I. Galloup, Texoma Natural Gas Company, Amarillo, Texas; J. H. Isherwood, North Penn Gas Company, Port Alleghany, Penna., and L. M. Batten, Cities Service Gas Company, Pampa, Texas.

Residential Gas Sales Conference

Meetings were held Tuesday and Wednesday and were presided over by C. B. Wilson, Chairman, Residential Gas Sales Committee, Natural Gas Section. W. E. Derwent, President, Association of Gas Appliance and Equipment Manufacturers, New York, discussed the subject of "Gas Appliances in the War and Post-War Period." During the period of discussion, J. W. Lea, Commercial Manager, Atlanta Gas Light Company, Atlanta, Georgia, talked on the subject of "An A1-A For Customer Acceptance." "Canadian Gas Company Operation After 30 Months of War," was the subject of a paper prepared by Charles M. Sieger, Controller of Gas, United Gas & Fuel Company, Hamilton, Ont., and was read by Henry O. Loebell, Surface Combustion Division, New York.

Industrial and Commercial Gas Sessions

Gas at work in the war production front was the theme of the Industrial and Commercial Gas Sessions and Luncheon on Monday of the Convention. An unusually strong array of leading industrial and commercial gas men and equipment manufacturers presented papers on the use of gas in war factories, army and navy bases and camps. The suggestions were of immediate importance and interest because of the unprecedented expansion of industrial gas outputs and the tremendous quantities of industrial gas equipment being produced at the present time and connected to natural gas lines throughout the country.

George F. B. Owens, Assistant Vice-President, The Brooklyn Union Gas Company, and Chairman of the Industrial and Commercial Gas Section of the American Gas Association, presided at the morning session.

George F. B. Owens
Chairman, Industrial and Commercial Gas Section

In opening the meeting, Chairman Owens emphasized the fact that important improvements in industrial gas equipment had caused industry naturally to turn to this fine fuel when production for war began to overshadow every other consideration. He pointed out that the record made by industrial gas in war production up to the present time has met exacting requirements laid down for it, and stated that it was impossible to estimate how much industrial gas equipment will be connected to our lines before the war is won.

Walter N. Ford, United Gas Pipe Line Company, Shreveport, La., gave a review of industrial and commercial gas in the war effort in the South and Southwest. The very effective national industrial gas advertising sponsored by United Gas Pipe Line Company for several years back has been instrumental in locating considerable war business in the Gulf Coast area.

Presenting for the first time the completed A. G. A. requirements for installation of gas burning equipment in power boilers, L. S. Reagan, Webster Engineering Corp., Tulsa, gave a background of the preparations for these new requirements, which will become effective January 31, 1943. Mr. Reagan is a member of the committee that prepared the requirements. Heretofore, there have been no national standards for installing gas burning equipment in power boilers, and it is therefore expected that these new requirements will be valuable not only to gas companies and to the users of natural gas in power boilers but also to local building and inspection authorities and to insurance companies, a number of whom assisted in the preparation of the requirements.

The Chairman of the A. G. A. Gas Engine Power Committee, G. R. Walton, United Gas Pipe Line Co., Houston, Texas, gave a preliminary review of the annual A. G. A. Gas Engine Census. Mr. Walton discussed a number of interesting phases of the use of gas engines in war plants and answered questions that were asked by several men present. The annual A. G. A. Gas Engine Census will be published this summer.

In a most interesting paper, Karl Emmerling, Assistant General Superintendent, The East Ohio Gas Company, presented some thought-provoking material on "Industrial and Commercial Gas Equipment—The Outlook for the Duration." Mr. Emmerling gave some pointers on how industrial gas men assist customers in their territories in getting the most out of industrial furnaces and ovens during the war period. He urged all present to scour their territories for additional equipment so that it can be put into use at the earliest possible time.

L. to R: A. F. Bridge, Southern Counties Gas Co., Los Angeles, California, (V. P., American Gas Association) confers with H. L. Gaidry, Chairman, Technical Section, New Orleans Public Service, Inc., New Orleans, La.

Photo A. Gordon King

D. W. Reeves, Oklahoma Natural Gas Company, Tulsa, presided at the Monday afternoon Session. Robert L. Mallory read the paper of Albert H. Koch, Minneapolis-Honeywell Regulator Company, Atlanta, Ga., entitled, "A Discussion of Industrial Gas Controls as Used in War Plants." This paper is printed in this issue of the JOURNAL.

Gas air conditioning, which a few years ago was in the research and early development stage, is now an important production tool in an ever-increasing list of war plants. James C. Patterson, Manager, Dehydration Division, Carrier Corporation, explained, within the limits of official censorship, the manner in which gas air conditioning—chiefly of the de-

Groups at the Convention:—On the left, L. to R: Don E. Herringshaw, Consumers Power Co., Jackson, Michigan; H. G. Swearingen, Central Illinois Light Co., Peoria, Ill.; Ted Kennedy, C. S. Goldsmith, Chairman, Distribution Committee, Brooklyn, N. Y.; Robert B. Allen, Michigan Consolidated Gas Co., Detroit, Michigan.

On the right, L. to R: Frank A. Engel, Chairman, Subcommittee, Cast Iron Pipe Standards, Elizabethtown Consolidated Gas Co., Elizabeth, N. J.; R. J. Kuhn, Consulting Engineer, New Orleans, La.; V. C. Hoddick, Rochester Gas and Electric Corp., Rochester, N. Y.; H. W. Nicolson, Subcommittee on Pipe Coatings and Corrosion, Public Service Electric and Gas Co., Newark, N. J.; J. J. Martin, Jersey Central Power & Light Co., Asbury Park, N. J.

Photos A. Gordon King

hydration type—has gone to work in war production.

As a closing feature of the final industrial and commercial gas session, an open forum was held on the very timely subject, "Industrial and Commercial Service, Sales and Maintenance Problems in War Time." Quick presentations were made by: H. G. D'Spain, Mississippi Public Service Co., Amory; James P. Dresen, Public Service Co. of Colorado, Denver; J. Mason Guillory, New Orleans Public Service Inc.; and P. J. Guelfi, Gulf States Utilities Co., Baton Rouge, La. These men told how big increases in industrial sales are being handled by representatives of their companies, and discussed some of the tricks of the trade which are making natural gas click in war plants in their territories.

Clarence S. Goldsmith
Chairman, Distribution Committee, A.G.A.

Distribution Conference

The Distribution Conference got underway Monday morning, May 4th, at the St. Charles Hotel, and was presided over by C. S. Goldsmith, chairman of the Distribution Committee of the A. G. A. The meeting consisted of discussions at which few papers were presented. The war has produced many new problems for the gas industry and the idea was to have a free and open discussion on these subjects by the delegates in attendance so that each could take home with him some thoughts which he could apply to his own particular problems.

The Luncheon Conferences were held on Monday and Tuesday. The Monday conference was presided over by Mr. J. H. Collins, New Orleans Public Service, Inc., and the Tuesday conference was presided over by Mr. H. W. Nicholson, Public Service Electric and Gas Company, Newark, N. J.

A Joint Symposium on Protection of Property and Personnel During the War Emergency was held Wednesday afternoon. Many delegates outlined the plans their companies had put in operation covering certain phases of plant and personnel protection and delegates from other companies added additional information.

There were no notes taken at the Luncheon Conference or at the last meeting. However, every man attending the meeting could take something home with him that would be of special interest to his company in connection with the plant and personnel protection problem.

Indiana Gas Association Meeting

The 32nd Annual Convention of the Indiana Gas Association was held May 11-12 at Indianapolis.

President F. B. Culley, in his report, dealt with war service problems, and took pride in the gas industry's record to date. "The application of the Selective Service Law to gas company employees warrants an attitude on the part of management, of full appreciation of present day demands for manpower. An adequate supply of trained workers for war production is required. Who, through ability to select and train personnel, is better enabled to meet such problems than the utilities? Occupational deferment requests have been few by gas companies. This is as it should be. We are proud of this record."

Louis Ruthenburg, of Evansville, President of Servel, and head of the Indiana State Chamber of Commerce, paid high tribute to American industry's war-time performance. "History probably will record our industrial achievement as the greatest single development in the whole course of World War II," he declared. "There is no need to bring proof that industry is functioning effectively in the war effort. I could cite statistics such as those of the machine tool industry, whose output in 1942 will be fifty times that of 1932. I could give impressive statistics about shipbuilding, steel, aluminum, magnesium output, but you know that the job is being done."

Plans to offset obstacles in the way of good service were discussed by J. M. Pickford, Northern Indiana Public Service Company, Hammond, and C. A. Peterson and J. M. McCaleb, Citizens Gas Utility.

There is no one answer to the question, "What will we do if we run out of gas?" according to L. A. Kirch, production engineer for the Public Service Co. of Indiana. "Growing industrial demands for gas in the war manufacturing program, plus an already heavy domestic load throughout the state, makes this question, a serious one for the gas man, the home dweller and the manufacturer.

"Standby artificial plants should be held ready, where natural gas is in use, and at the same time, local gas producing fields should be tapped and prepared for use in emergency," the speaker said. "Manufacturers dependent on natural gas for heat treating purposes would be well advised to have their equipment adjusted for quick conversion to oil, or to a use of a gas and oil combination."

H. Carl Wolf, President Atlanta Gas Light Co., Atlanta, Ga., advocated preparations for defence against sabotage and enemy attack. "You are," he said, "in the north central target area, one of the three areas set out by our military experts as most liable to attack.

"Blackouts won't give complete protection from raids. They confuse the enemy by concealing his target, but they don't prevent bombs falling. So, don't be unprepared, don't be too late, don't let it happen here."

Mr. Wolfe urged full cooperation with civilian defence councils, and complete defence units in each company as well, as the best way to prepare for the dangers of attack and sabotage.

Dean H. Mitchell, President Northern Indiana Public Service Co. presented a paper titled "The Gas Industry Must Carry On." He discussed many problems of the industry under the war program and stated "It occurs to me in the light of the problems we have discussed that the obligations of our industry can be summed up in a four-fold manner: first to the government; second, to the public; third, to our personnel; fourth, to our investors."

An address by A. A. Potter, Dean of Engineering, Purdue University, appears elsewhere in this issue.

Joint Production and Chemical Committee Conference

THE above conference was held May 25-26 at the Pennsylvania Hotel, New York. R. H. Arndt, Chairman Gas Production Committee presided at the meeting Monday morning.

Major Alexander Forward, Managing Director of the A.G.A. welcomed the delegates. In his address he said:

"If one year ago at your Conference some one of us had predicted that on May 25, 1942, we would be close to a limitation order on the sale of manufactured gas it would have been regarded as the joke of the Conference. Yet we are right at that point. Many of our manufactured gas companies have already reached the limit of their capacity. War Production Board officials have told us with unmistakable emphasis that manufactured gas companies will not be permitted to take on business to the limits of their capacity and then be supplied through priorities with gas making machinery and equipment to further extend their business. It is all we can do to secure adequate repairs to our existing machinery. Some companies have already adopted limitations on customer supplies, in several cases with the approval of their regulatory commissions.

C. F. Turner, East Ohio Gas Co., Cleveland, Ohio

"Look at the natural gas industry for a moment. We have proceeded on the assumption that the supply of natural gas in the ground was adequate to fill all demands and that in some sections the reserves are almost unlimited. War conditions resulted in limitation orders prohibiting new classes of customers for natural gas and sharply limiting the drilling of new wells to maintain the supply. In those areas where natural gas is still plentiful, and all demands can be supplied, transportation facilities are being taxed and the ingenuity of natural gas executives and engineers has been brought into full play to maintain war industries, army and air camps and essential civilian uses.

"All I have said illustrates the greatly altered position of gas production engineers. For the most part they are at their wits end in grappling with these problems and trying to produce enough gas to supply the demand of these critical times. But they have the knowledge, the experience and the resourcefulness and they will do the job."

Colonel Edward B. Towns, Office of Civilian Defense, New York, N. Y.
Photo A. Gordon King

"Electric Welding in Gas Plant Maintenance" was the subject of a paper read by E. W. P. Smith, Lincoln Electric Co. An article on the same subject written by A. F. Davis, V. Pres. Lincoln Elec. Co., was printed in the May issue of the JOURNAL.

L. J. Willien, Public Utility Engineering & Service Co., Chicago, presented a paper titled "Increasing Plant Capacity to Meet Wartime Demands." It covered valuable data on coal gas, water gas, mixed gas and high b.t.u. gas.

R. J. Sheridan, Chairman Chemical Committee presided at the after-

1. L. to R: H. L. Gaidry, Chairman, Technical Section, New Orleans Public Service, Inc., New Orleans, La.; D. P. Hartson, Chairman, Technical Section Committee on War Activities, Equitable Gas Co., Pittsburgh, Pa.; J. V. Postles, Philadelphia Gas Works Co., Philadelphia, Pa.

2. L. to R: F. J. Pfluke, Chairman, Subcommittee on Water Gas, Rochester Gas & Elec. Corp., Rochester, N. Y.; R. E. Titus, Chairman, Luncheon Conference on Production of Carburetted Water Gas, Kings County Lighting Co., Brooklyn, N. Y.

3. L. to R: R. J. Sheridan, Chairman, Chemical Committee, Brooklyn, N. Y.; Dr. Gilbert E. Seil, E. J. Lavino & Co., Norristown, Pa.; and T. L. Robey, Vice Chairman, Chemical Committee, Washington, D. C. *Photos A. Gordon King*

noon session at which several papers and reports were presented.

H. L. Gaidry, Chairman of the Technical Committee presided at the Tuesday morning session.

The first speaker was Col. Edward B. Towns, Assistant Liaison Officer 2nd Corps Area O.C.D.

He spoke extemporaneously on defense subjects of special interest to the gas industry. In reference to the gas company personnel who are a part of the company defense program, he said if the company would certify the names of their employees so engaged, each would receive identifying insignia for their autos so that they could answer an alarm promptly and get to their stations during the blackout.

Col. Towns answered many questions from the floor which helped clarify the O. C. D. plans of operation as they affect the industry.

Four luncheon conferences were held on Tuesday—No. 1—Carbonization of Coal, 2—Production of Carburetted Aviation Gas, 3—Production of High B.t.u. Gas, 4—Chemistry in the Gas Industry.

The Conference on Operation of Public Utilities Motor Vehicles was also held on Monday and Tuesday. On Monday, Chairman Jean Y. Ray presided, E. Page, Ethyl Gasolene Corp., Detroit, read a paper titled "Engine Adjustments for War Time Fuel," and the subject of "Truck Operations under Present Conditions" was discussed in a paper by W. J. Cumming, Maintenance Section, Office of Defense Transportation, Washington. At the Tuesday meeting E. W. Jahn, Consolidated Gas & Elec. Co., Baltimore, presided. Attendance nearly 300.

34th Annual Meeting Pennsylvania Gas Association

The Pennsylvania Gas Association held a one day meeting, May 18th at the Bellevue-Stratford Hotel, Philadelphia, Pa. P. T. Dashiell, President, welcomed the delegates, and was followed by an address by George S. Hawley, President American Gas Association. At noon sectional luncheon conferences were held, as follows. Accounting, Engineering, Distribution, Production and Customer and Employee Relations.

Later a general session meeting was held and addresses were made by Walter C. Beckjord, V. Pres., Columbia Gas & Elec. Corp., George H. Whitwell, V. Pres., Philadelphia Elec. Co. and Nathan W. Shefferman of Sears, Roebuck & Co. The banquet was in the evening, and was addressed by Allen A. Stockdale.

Board of Trustees of Institute of Gas Technology Elected

Pursuant to the By-laws of INSTITUTE OF GAS TECHNOLOGY, the Annual Meeting of the Members was duly called and held May 22, 1942, at 10:30 A.M., at the INSTITUTE OF GAS TECHNOLOGY in Chicago, Illinois.

At the meeting there were present in person or by proxy 20 members out of a posible total of 45, or a percentage of 44.4. Those present in person or by proxy constituting a quorum in accordance with the By-laws, an election of a Board of Trustees was held in which the following persons were unanimously elected.

To serve for 1 year: A. R. Bailey, W. Alton Jones, Alfred O. Kaufman, Frank H. Lerch, Jr., Clifford E. Paige, Louis Ruthenburg, Wilfred Sykes.

To serve for 2 years: Frank H. Adams, Walter C. Beckjord, Thomas Drever, N. H. Gellert, N. C. McGowen, Herman Russell, Frank C. Smith.

To serve for 3 years: F. M. Banks, Harry R. Cook, Jr., E. M. Farnsworth, Robert B. Harper, George S. Hawley, Marcy L. Sperry, Paul R. Taylor.

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A Titanic Struggle of Resources

By

Hon. Harold L. Ickes

Secretary of the Interior
and
Petroleum Coordinator for War
Washington, D. C.

THERE ARE so many important things at this time that I want to talk about, all of them, of course, bearing on the war, that I shall waste no time with preliminaries. Viewed either from an individual or from a community or from a national aspect, the war easily outweighs every other consideration. Nothing else is significant.

For us to spend time reminding each other how petroleum embraces all of the natural hydrocarbons, of which natural gas is one, isn't going to get us far. It isn't even interesting to you who know it so well. To spend this opportunity tracing the processes by which nature has supplemented our wealth of oil supply with natural gas to facilitate its removal from the underground storehouses isn't going to contribute anything to victory. It is too much like going before a roomful of college presidents and running through the alphabet and expecting them to maintain even a mild interest. What *is* important and what *will* help in the prosecution of the war is a consideration of how to harness those hydrocarbons and how to make the best use of them in licking the tar out of millions of cut-throat pirates.

During the past decade or so, when Hitler and his "co-hordes" were planning for war, we in this country were planning peacefully for the conservation of our petroleum resources. We were learning how to recover oil and natural gas efficiently and with sharply decreasing waste. The men of *your* industry and your cousins in the *oil* industry, the state conservation authorities, and the Federal agencies were working together. They were learning all that there was to know about reservoir pressures and how they could be controlled; how they should be maintained in order to keep the gas in solution in the oil; about "pressure sinks" and the need for a regular and conservative spacing pattern; about correlative rights in sharing equitably the productive energy of a gas or an oil field; and in mastering these subjects jointly they learned—most important of all—cooperation. If it is true—and I have heard it said—that the oil industry and all of its related branches, including your own, gave the country its first and best lesson in wartime team-work, it was due, I have no doubt, to the practice you had during those days when, together, you were learning the alphabet and the subsequent lessons of your industry. In doing those things, you were not planning for war, yet you were, surprisingly enough, making it possible for the country to be ready if war should come at least so far as your industry was concerned.

Much to Hitler's despair we *still* have the greatest petroleum resources of any country in the world; and to his increasing dismay he knows that enough natural gas is available in the underground reservoirs to do the job of lifting to the surface the oil that will ultimately blow him and all his stooges in—well, I won't name the place; you can fill it in for yourselves.

Looking back over the road that we have traveled, which at times has been quite rocky and which frequently has meandered through uncharted lands, I am frankly amazed at, but grateful for, the things which have been learned and the things which have been done. Without that knowledge and without those accomplishments, the winning of this war would be made immeasurably more difficult. This is the same as saying that without petroleum, and without natural gas, we could not win this war within the time which it will now take us. Certainly, we could not win it as it is to be won if we still had to depend upon the gas and oil production practices which were customary during the decade which followed the first world war.

A Pertinent Example

If there be anyone who doubts this statement, let him look at the Cotton Valley field here in the State of Louisiana. In 1924, when this field was being developed, oil was discharged into earthen reservoirs, with no attempt either to restrict it or to conserve the enormous quantities of gas produced. In some instances, wells with a daily initial open-flow capacity of as high as 50 million cubic feet were blown into the air for weeks in the hope that the gas wells might turn into oil wells. At times, the atmosphere in the low wooded areas was dense with gas vapors and oil spray.

Such wasteful practices could not help to win a war which depends so much upon petroleum for victory. Today, deeper zones are being produced in the Cotton Valley field. The gas is not being wasted. It is being pumped back underground to aid further in the recovery of oil. The owners of the land and the operators in that field have pooled their interests, big and little alike, to assure the efficient production of gas and oil. That is the kind of cooperation that counts; that is what is becoming more and more the American way. And yet, it really is amazing that we could have learned so much in so short a time. There was a brief period of only 15 years between the worst and the best, between practices which would have delayed the winning of a war and those which will win this war in a minimum of time.

Winning this war is not the job of any one or of a few of us; it is a job to which every last one of us must apply himself to the utmost. In our common task, we must forget that state lines exist; that there are corporate entities in the gas and oil business. The pilots over Australia, the soldiers driving our tanks and combat cars, and the sailors in the boiler rooms of our warships don't care whether the gasoline and fuel oil that they need come from the Mid-Continent or the Gulf Coast or whether they were produced by this company or by that. They want the *oil;* they want the right *kind* at the right *places* at the right *time.* It is our job to see that they get it. *This job we will not shirk.*

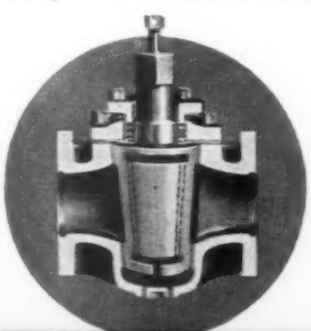
Gas and Oil Reserves

Our principal gas and oil reserves are in the Gulf Coast States; our large oil refineries are located at water terminals on the Gulf Coast and on the East Coast. These two regions, in fact, comprise a single area, with the Gulf Coast the producer and the East Coast the principal consumer. In times of peace, communication between them was maintained by a fleet of tankers which operated between Gulf and Atlantic Coast ports with the regu-

"Cast down your bucket!"

Lost at sea for many days a ship suddenly sighted a vessel. From the unfortunate ship's mast a signal was given, *"Water, water; we die of thirst!"* The distant vessel at once replied, *"Cast down your bucket."* And again the signal, "Water, water, we die of thirst!" Back came the answer, "Cast down your bucket where you are." Again and again the same signal; the same reply. Finally in desperation the captain of the distressed vessel cast down a bucket. It came up full of fresh, flowing water from the mouth of the mighty Amazon River.

Cast your bucket right in your plant, right in your fields of operation. Check your flow lines and discover what your valve costs really are. Then let Nordstrom Valve engineers prove the definite savings you can make by replacing costly-operating valves. By use of Nordstrom Multiport Valves you can invariably save extra piping, extra fittings, and make one or two valves do the work of three or four. Perhaps your valve replacements have been all too frequent. Then consider the extended life of Nordstroms. They conclusively prove their economy, even when their initial cost is slightly more than that of ordinary valves. So again we say, "cast your bucket" for *lower* valve costs on all your flow lines. A signal to Nordstrom engineers is sufficient.



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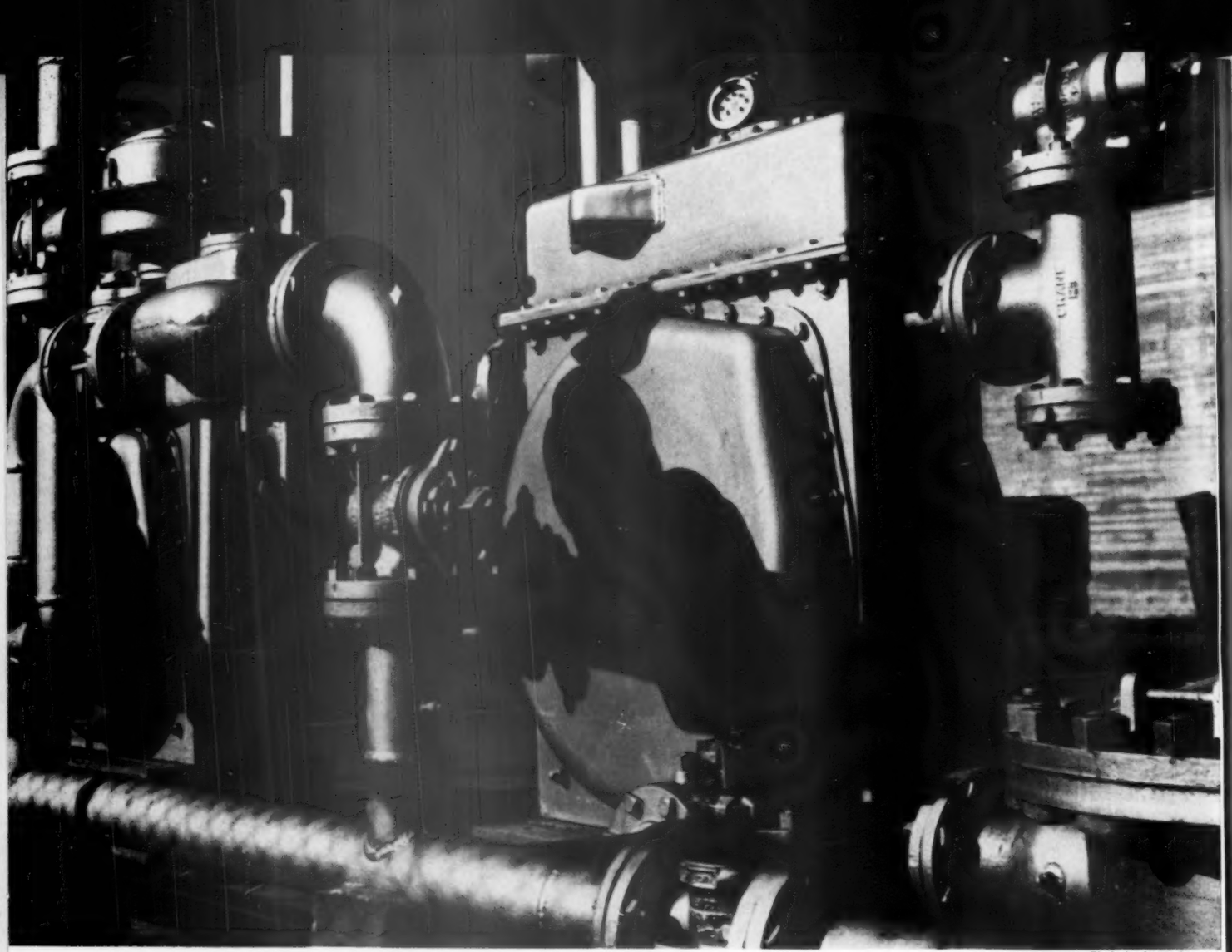

Photo by James Leonard

Natural Color photograph showing Nordstrom Valves, Emco Large Capacity Gas Meter and Emco Balanced Valve Regulator

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larity of a ferryboat service. More than 95 percent of the oil consumed along the East Coast was brought in by tankers. Our tanker fleet was entirely adequate for this peacetime service but now we do not have enough tankers to meet all of the wartime requirements. And so new problems have arisen.

Just about a year ago the owners of American tankers were called upon to assign a substantial part of their tonnage for services which were necessary to rebuild to a satisfactory level the oil stocks in the United Kingdom. A second call followed soon thereafter. The removal of these tankers from our own coast service resulted in such a shortage in our transportation facilities that the need for unified action within the oil industry became essential in order that the war needs for oil might be met. Accordingly, the Office of Petroleum Coordinator for National Defense was established by a letter of the President dated May 28, 1941. Now the name has become, more appropriately, Petroleum Coordinator for War.

In about three weeks the Petroleum Coordinator's Office will have completed the first year of its work in coordinating the activities of the gas and oil industries of the United States. The first period of our operations, extending to the treacherous attack upon Pearl Harbor by Hitler's murderous little brown Nordics, saw many drastic moves that were necessary to coordinate the petroleum industry for emergency action. On December 8, 1941, the Petroleum Industry Council for National Defense. later called the Petroleum Industry War Council, heard, by radio, the President's address to the Congress and proceeded to make immediate plans to go forward on a war basis.

East Coast Oil Industry Organized

The East Coast oil industry is now organized to operate as a unit in meeting the essential petroleum needs of that area and it is doing a magnificent job in developing every available means of moving oil overland and by inland waterways. It is no simple matter to change, on short notice, transportation methods which have been years in developing and substitute therefor difficult and costly transportation by tank car, barge, and pipeline. We feel that it is only prudent, however, to prepare for the day when it may be necessary for us to rely entirely on land and inland water transportation to supply oil to the eastern Seaboard. I believe that the soundest national policy now dictates that we should henceforth operate on the theory that there will be no tankers available for East Coast service. The Army or the Navy may need those tankers elsewhere. We know that we will be called upon to supply more tankers for the war work of the United Nations, including our own, in all parts of the world. And when the call comes, we will not fail our Allies or our own armed forces. Besides, we feel that the heroic seamen who man our tankers should not be asked to run the risk of losing their lives, as so many of them have done, in order to bring oil to the East Coast for nonessential uses or even for essential uses, if there is some other way of getting the oil there. Certainly, the life of any sailor is too precious to be sacrificed in order that some safe compatriot may be able to drive to his golf club or go on a fishing trip.

The railroads and the oil companies, working harmoniously and effectively, have done spectacular things in moving enormous quantities of oil by tank car to the East Coast. That movement now is nine times as large as it was during the week before the attack on Pearl Harbor. When we were called upon last summer for a large number of tankers for the service of our Allies, particularly Great Britain, we insisted that tank cars be used as substitute transportation by the companies supplying the East Coast. I doubt whether even the most optimistic believed that 600,000 barrels of petroleum could be moved each day into the East Coast states by tank car, as we have been doing recently. And now that the war is getting closer to the Pacific Northwest, these same sources have had to find additional tank cars for the transportation of oil to the states of Oregon and Washington.

Methods to Increase Supply

We have not relied *exclusively* upon tank cars to supply the Atlantic Coast states. We are taking up old pipelines and are going to re-lay them in such a manner as to shorten the haul to the Eastern Seaboard. Barges are being diverted from their customary runs in order to move more oil up the Mississippi River and thence into the eastern area. More barges and tugs to pull them will be built. Nevertheless, all of these additions, improvements, and efforts may not be enough to make "driving as usual" possible for some time to come, especially along the Atlantic Seaboard.

We who live in the East are prepared to do more walking. We are pooling our transportation in order to see that those who work in essential industries will have the means to get to their jobs. We are rearranging our house heating for next winter. Those of us who can change from oil heating to coal heating are cheerfully doing it. We are going to eliminate every nonessential use of petroleum products in order that there will be oil for our battle ships and gasoline for our tanks and for our flying fortresses. The paraffin which might have gone into candles for birthday cakes and Christmas trees will waterproof a soldier's tent. Come to think of it, the candles on my birthday cake would water proof several tents.

Changes of such variety and magnitude cannot be tossed into the placid pool of our national life without setting in motion a whole series of widening ripples. The oil which we cannot move to the East Coast may pile up in your Gulf Coast refineries. As the tanks fill up, it becomes necessary to curtail refinery runs or to pour refined products back into the ground. As refinery runs are curtailed, it becomes necessary to restrict further the production of crude oil. As crude oil production is curtailed, the income of the crude oil producer is lowered. That makes for problems with the banker and the merchant and affects all phases of our economic life—mine as well as yours. But all adjustments must be made with an eye fixed upon war requirements, everything must be sacrificed to the united resolve of the American people to win the war.

State Laws Necessary

In some quarters there seems to be an unjustified feeling that state laws and the functioning of state regulatory bodies are no longer necessary or important on the ground that the Federal Government has taken over full control of the gas and oil business. I can assure you that there is no basis for such a point of view. It has been necessary to impose, for the period of the war, a certain amount of Federal regulation of the oil and gas industries just as it has been necessary to regulate other essential industries. However, close integration of the full efforts of all parties concerned will be required if the gas and oil industries are to meet successfully the challenge of this war.

On many occasions, I have told the Petroleum Industry War Council and other groups that it is the responsibility of the industry to solve the

problems created by the war with as little assistance from the Federal Government as possible. The industry must devote its talents and its energies to war production. The Government must provide the industry with the plan and direction by which the talents and energies of the industry can be guided.

As Petroleum Coordinator, I have attempted, through the medium of industry advisory committees, to achieve cooperation between the Government and the petroleum industry. I have selected the personnel of these committees from the nominations which those in the industry themselves have made. It is my sincere belief that only through the cooperation of Government and industry, carried out in good faith and with mutual trust, will we be able to achieve the smooth action that results from coordination and that is required for the winning of the war. That my confidence that this was an attainable objective was not misplaced is proved by the conscientious and intelligent work that is being done by the industry committees and representatives of the Government.

In peacetime, the natural gas industry has provided fuel for domestic heating, cooking, hot-water heating, and refrigeration. It has also sold large volumes of natural gas to industrial consumers. In wartime, natural gas assumes an added importance, particularly when it is used in those industrial enterprises which are making the materials that are necessary for our fighting forces.

Natural Gas and Natural Gasoline Division

To meet the new situation and to recognize the importance of natural gas and natural gasoline in the war, we are creating a Natural Gas and Natural Gasoline Division which will function in the same manner and on the same level with the other operating divisions in our Office. The Natural Gas and Natural Gasoline Division will occupy a position parallel with the Production Division, Refining Division, Transportation Division, and Marketing Division of the Petroleum Coordinator's office.

We may assume that all efforts will be made by the natural gas industry and by governmental agencies to continue the supply of natural gas for ordinary domestic purposes. The industry must, however, review its operations for the purpose of seeing to it that the strategic war industries using natural gas will be certain of a constant supply. This is a job primarily for the industry, but it also concerns governmental agencies and the public. The public can best aid in the solution of this problem by a wise use of natural gas. Governmental agencies can do their part by maintaining a constant and alert survey of the demands for natural gas and by assisting the industry in doing the things that need to be done. It will be the duty of the industry to recognize immediately the necessity of assuming the additional war-time load which has been placed upon its shoulders and adjusting its operations accordingly.

All of us—Government, industry, and consuming public — realize that oil and natural gas no longer can be measured in terms of barrels of cubic feet alone. We understand that natural gas and oil in our victory drive must be measured in terms of tanks, planes, ships, bullets, and bombs. The waste of a gallon of gasoline or the nonessential use of a cubic foot foot of natural gas means a proportionate waste of tanks, planes, ships, bullets, and bombs, either in their manufacture or in their use as instruments of victory.

We are faced with a great and patriotic task. We have an opportunity to achieve something for which those who will come after us will revere us as we honor those who endured under Washington or fought here at New Orleans under Jackson. Not everybody, to be sure, can march in the ranks, even if age and physical ability were on their side. But we are learning more vividly every day that wars cannot be won by soldiers alone, however many and brave they may be. War, as we know it today, is a battle of the production line. It is a titanic struggle of resources. The world knows that this one will be won by the side that has the most petroleum, plus the best organization to make it available to the fighters.

Armies still march on their stomachs. But petroleum has changed everyting else. Without petroleum we could have no flying fortresses. You in the industry have the solemn responsibility of producing it in such quantities and within such time limits as will make it possible for our ships and our tanks and our bombers to speed to victory.

The United Nations are depending on you.

Address delivered before the Annual Natural Gas Convention, New Orleans, La., May 6th, 1942.

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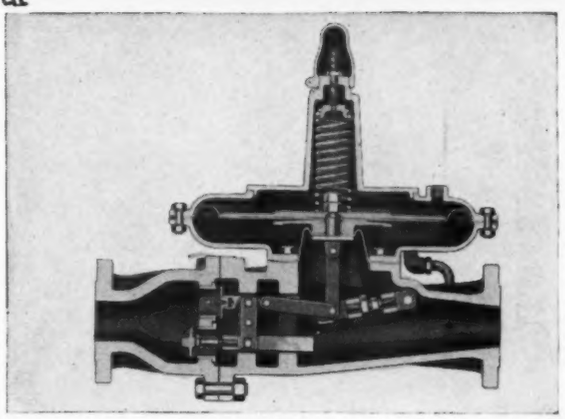

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Pipe Line Broken by Flood

By
Harry Padgett
Boulder, Colo.

IN PRE-WAR SEPTEMBER the consumer was always right. In war time April however, the customer must be on the side of allocations, priorities, and rationing if he would be right. The people along the eastern foothills of the Rockies recently had that fact brought home to them literally when the natural gas supply was cut off by a flood which tore out several lengths of the main pipe bringing it from the Texas fields to Colorado and Wyoming points. "Rationing" began at once, a self-imposed voluntary form of rationing but nevertheless consumers were told that unless they greatly curtailed their uses of natural gas their supply would be entirely off.

The break in the gas line operated by the Interstate Pipeline Company was very similar to one of last September and reported in AMERICAN GAS JOURNAL, November, 1941. The first (in twelve years) resulted in magnificent response by the consumers, industrial users shutting down or turning to standby fuels, and home consumers reducing their use by 75%. This time the company knew the pack in the pipe together with a small amount of manufactured gas which could be made in Denver and Boulder would not suffice for both types of users and that there were many industrial users who could not be shut off as long as a supply lasted. It was up to Mr. and Mrs. Citizen to shut off as much as possible and hope that the break could be repaired in time to enable most essential uses of the gas to continue. The industries engaged in war orders naturally would get full protection in any event.

While the break in New Mexico's Corrumpas Creek was at the point of the first major break in September and under circumstances almost identical with that of the previous year, other conditions had changed greatly. Industrial users who could not be shut off, a shifting and greatly increased population making heavier demands on all uses of gas fuel, a time of year when severe cold weather could happen and at a time when the supreme court had ordered lower gas rates, these were the items of consideration in making the facts known.

News of the break came at 3:30 a.m. April 18, the 6" by-pass was completed at 9:35 Sunday evening, the 19th. The 6" by-pass however failed to bring up the pressure to the point where the officials could feel they had situation in hand and Monday morning the 20th the second 6" by-pass was completed and pressure again began to rise, but it was not until 6:30 Monday evening that the pressure in Denver was near normal.

At the break four 20 foot lengths or joints of pipe had gone out. However, it required several hundred feet of pipe to loop around the break. The main pipe is 22" diameter but after the first break in Sept. a 12" permanent emergency loop had been started around the point of the break but not completed due to conditions of these times. The presence of this partially completed loop however which stayed in greatly facilitated restoration of service for the 6" lines were tied into the 12" and enabled quicker resumption of service. At Clovis and Clayton, New Mexico the Interstate Pipeline Company had also spotted emergency repair equipment and materials and it did not take long for the crews to start to the job, but as before the going over the difficult terrain took a long time.

In Denver and surrounding area served by the Public Service Company, principal customer of the pipeline company, the public had been informed and asked to cooperate by using less gas, which they did. However the pressure at one time became so low that it was feared it would be necessary to shut off all users, the pressure reading 6½ pounds. It was 300 miles to the point of the break, the gas after repairing was completed, could be boosted along at the rate of 25 miles an hour, which meant that twelve hours would have to elapse after the pressure was restored at the break before it could be felt in Denver. Working conditions were bad, with muddy flood waters still swirling, and muck making it difficult for mechanized equipment.

As for consumer demands, Denver has about 25,000 house heater customers and 100,000 gas users for all purposes including house heating and cooking. They have experienced a peak demand here of 57 million cubic feet a day, while the pipe in normal operation has a capacity for only 90 million.

At Corrumpas Creek, in which until last September old timers of the region declared they had never seen any water running, the repaired sections installed permanently after the first flood had been covered with tons of concrete to prevent just such an occurrence. The company had taken every possible precaution to prevent another interruption in serv-

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ice. But it was manifestly impossible to safeguard every dry creek crossing between Denver and Amarillo, the pipe line crossing 260 just such "dry" creeks as Corrumpas in that distance. The record of twelve or thirteen trouble-free years of service, broken twice in less than one year's time, speaks for the general layout of the line.

How did the public take it? There was more criticism than before, but not a great deal; and generally it seemed that the public cooperated even better, for they made the pack in the pipe together with the gas manufactured in a small standby plant in Denver do. Statistics aren't available, but it is apparent that the home user must have used much less to enable essential industrial users to maintain full schedules.

One newspaper subscriber wrote a letter which was published criticizing the company for permitting such breaks to happen. But editorial writers and other subscribers took up the cudgels on behalf of the gas companies, pointing out the enormous difficulties in protecting all crossings of creek beds; and the building of another pipeline by an alternate route is at this time impossible, even if the company should consider building one.

'Mothers, Let's Show 'Em'

Editor: I'm answering H. M. K. as one average wife and mother to another.

I'm glad to see average people getting a good mad on when they have a sample of inconvenience such as was caused by the break in the gas pipeline. But what I want to know is this: What and how are you going to manage when a real emergency comes?

There are thousands of babies in the world who aren't worrying about a bath every day—but a bath any time. Every time I dispose of my leftover food, I wonder where some little child is "over there" who might be dying for want of those few vitamins. My babies don't go dirty so long as there's a pint of hot water for a "spit" bath.

I think we'd better take some of these things in our stride.

So we have to do without sugar? Coffee? Gas? All the hot water we want when we want it? So what! Our grandmothers never had 'em.

Let's show the rest of the world that we can take it on the home front as well as our boys on the firing line can take it. In God's name, don't let those boys of ours die in vain!

MRS. ELEANOR CRAMER, Denver

A Denver paper publishes cooperative comment

A similar question under discussion some time ago with government officials indicated that their reliance on the present service would "have to do"; not that they frown on the idea, but simply that materials aren't available for such a mammoth project. Under the difficult conditions which slowed repairs, with the public's cooperation in easing the load during the emergency, and apparent understanding of the necessity for conserving materials, the present pipeline will probably serve and no one will suffer any great amount of inconvenience. At least it was demonstrated that the Public Service Company of Colorado has the complete confidence of the public, and the company is grateful for their reliance.

To Determine Liquid Flow Without a Meter

By
W. F. Schaphorst, M. E.
Newark, N. J.

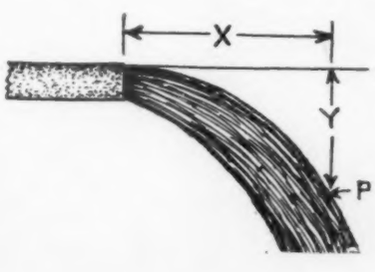
The quantity of water or any other liquid flowing from a horizontal pipe, as shown in the accompanying sketch, can be computed with surprising accuracy by simply measuring the horizontal distance X and the vertical distance Y to any convenient point P as indicated by the dimension lines.

This is possible because of the well known law of physics which tells us that a horizontally projected body falls vertically from a state of rest.

I shall not go through the derivation of the following rule, but it will enable you to determine the quantity of water or other liquid flowing from a horizontal pipe. The *italic* wording is the rule. The wording that is not *italics* shows how the rule is applied.

Please note that all measurements are in inches, and *not* in feet, and the answer is always in gallons per minute.

A short cut that will make your work easy is to choose a point P that is down a distance 9 inches, 16 inches, 25 inches, 36 inches, etc., because their square roots are exactly 3, 4, 5 and 6 respectively. In that way it will not be necessary for you to refer to tables of square roots or to arduously extract a square root by "longhand".



RULE: Measure the internal diameter of the pipe in inches, and "square it". Thus if the internal diameter is 2 inches you will have 2 x 2 equals 4. *Then multiply by the distance X in inches.* Thus if the distance X is 20 inches you will have 4 x 20 equals 80. *Then multiply that by 2.56.* Which gives us 80 x 2.56 equals 204.8. *Lastly, divide that by the "square root" of the distance Y.* Thus if the distance Y is 25 inches, the square root of 25 is 5. Dividing 204.8 by 5 we get 40.96 gallons per minute, which is the answer.

In the event that you might want to convert the answer into cubic feet per minute, divide the above answer by 7.5 as there are approximately 7.5 gallons in a cubic foot.

Industrial Gas Controls As Used In War Plants

By
Albert H. Koch
Minneapolis-Honeywell Regulator Company

THE TYPES of industrial gas controls and their applications for war plant use are about the same as they were previous to war production. On the other hand, the industrial equipment, such as furnaces, retorts, ovens, etc., on which these controls are being used, is being put to entirely new uses in today's war plants. This means that although the war program has produced little change in industrial gas controls, it has changed the requirements of such controls.

Up until quite recently, our war production work was being carried on in most cases in large industrial plants. However, there seems to be a definite trend for the small plants to get into war production work and if this trend continues, and indications are that it will, there will probably be more small plants engaged in war work than there will be large plants similarly engaged.

Large plants, because of their extensive peace time operations, have had previous experience in the use of all types of fuel for industrial process work, including natural gas, which experience included the use of automatic controls for such fuels.

The relatively smaller plants that are available for war work more often than not, lack the necessary equipment, previous production experience, and properly trained personnel to efficiently do the high type of manufacturing so essential in our war program. However, given the proper equipment and assistance in training their personnel, such small plants can do a credible job of war production work, thereby helping themselves as well as their country.

Since the industrial gas control problems of the small plants are fundamentally the same as those of the large plants, only more critical because of lack of experience, and since many of these small plants may now become prospective industrial users of natural gas for the first time, I believe we will benefit most if this subject—"Industrial Gas Controls as Used in War Plants"—is considered from the standpoint of the small industrial plant, rather than taking the usual large plant viewpoint.

With the foregoing as our starting point let us consider of what use industrial gas controls are to the average manufacturing plant. Broadly speaking, I believe industrial gas controls have been and will continue to be used in industrial plants for one or more of the following reasons:—to save fuel, to improve the quality of the product, to insure safe operation and to increase production.

You can no doubt remember some peace-time plant superintendent saying that industrial gas controls were fine for some plants but in his particular case—the gas bill was too small to warrant buying controls to save fuel, the quality of the product was satisfactory (meaning it couldn't be improved or the market did not require better quality), the gas burning equipment was safe because of the precautions they took in its operation, or their production capacity was ample for the business they were doing. In short, a number of industrial users of natural gas were nonusers of controls and others only considered controls from the standpoint of safety or fuel saving.

Today these same small manufacturers are taking on or are planning to take on some War Production work. In order to successfully engage in war production work they must now take into account all of the following—natural gas must be used efficiently because there is a great demand for this easy to handle, high heat value fuel; war production work must meet rigid government requirements so no compromise is permissible with quality; fuel burning equipment must be made safe to avoid injury to personnel and equipment; and the plant must operate at maximum capacity.

What are some of the industrial gas controls that lend themselves to this war production work? First and most important are the various types of temperature control instruments such as Potentiometer Pyrometers.

The Potentiometer type of Pyrometer is being used extensively in war production work because the manufacture of armaments requires considerable heat treating and metal working. Temperatures from 200 degrees F. to 3200 degrees F. can be controlled automatically with this type of equipment. Briefly, a complete installation consists of only three units—a Thermocouple installed in the unit to be controlled, such as a heat treating furnace, the Recording or Indicating Control Potentiometer which is installed remote from the gas burning unit and the Control Valve which automatically regulates the quantity of gas fed to the burner as determined by the Potentiometer Controller.

Each particular application pretty much determines the Thermocouple specifications; however, extreme care should be exercised when selecting a location for the Thermocouple. This is particularly true from a control standpoint because no automatic control equipment can control a variable any better than the measuring system of the control reflects changes in that variable. Very often it is advisable to control a unit, such as a furnace, in zones because either different temperatures are required in different sections of the furnace or the size and construction of the furnace makes it impossible to maintain a uniform temperature throughout when controlling from one Thermocouple. Zone control installations need not be complicated because each zone can be handled as an individual control installation. About the only useful advice that can be given regarding the selection of Thermocouple locations is—to determine, with the aid of the plant personnel, or actual tests, at what point in the process the temperature is most critical and then select a Thermocouple location to measure the temperature at that point or if that is impossible, at some other point that has a definite relation temperature-wise to the theoretically correct location. This phase of a control installation is stressed here because too often thermocouples are installed where they will fit best instead of where they will perform best.

Control Potentiometers can be furnished in either the Indicating or Recording type. The Recording type has the definite advantage of

giving a continuous and permanent record of the temperature under control which in war production work is very useful because such a record gives plant management a check on performance even in their absence and also because such a record makes it possible to duplicate past results without loss of time and material.

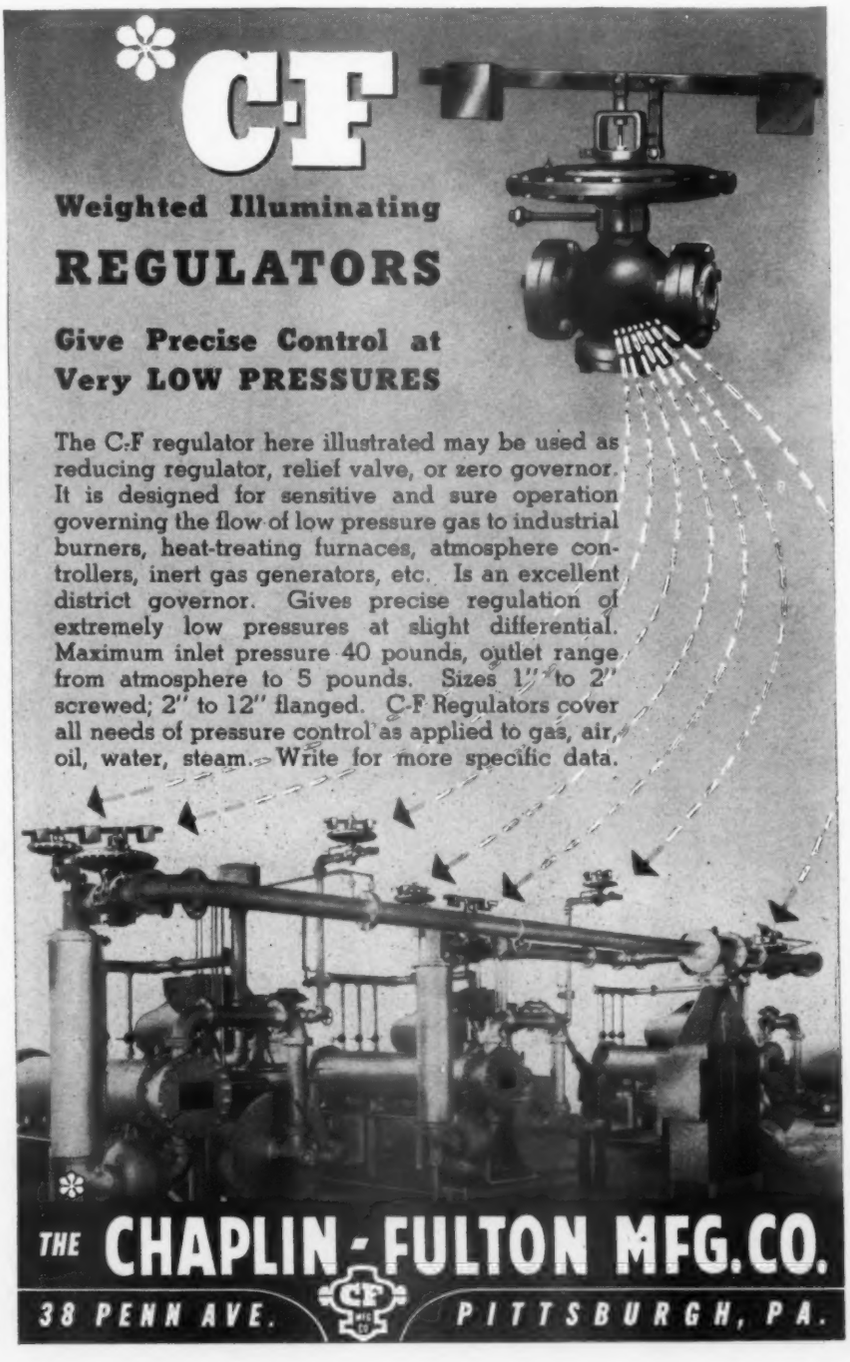
Control Potentiometers can further be furnished with three fundamentally different types of control action: Two-Position or "On-Off" action, throttling action, and throttling action with automatic reset. Two-Position control can be used successfully on batch processes or on continuous processes that have large storage capacities either as fluid volume or as heat content. Although large fluid or heat storage capacities sometimes introduce lags which may be said to be unfavorable to control, the predominant effect of all storage capacity is favorable because it is the equivalent of a balance wheel in its tendency to keep the system in equilibrium.

Most processes that are found in war production work are of the continuous type with rather limited storage capacity so some form of throttling control action is desirable. The word "throttling" implies that this type of control tends to hold the control valve in a throttled position corresponding to, and proportional in its opening, to the demands of the system. One possible shortcoming of throttling control is that the control temperatures may drift or "droop" with changes in process load. The degree of "droop" is always a function of both the load change and the width of throttling range adjustment.

Where the characteristics of the system being controlled are such that a throttling controller will "droop," the feature of automatic reset should be incorporated in the controller. This feature is an added or superimposed characteristic and does not affect or change the throttling range adjustment. It begins to operate the instant there is the slightest departure of the temperature from the control point, automatically resetting the gas control valve just enough to supply the required quantity of gas to make up the difference between that required to hold the temperature at the control point and that which would be supplied to hold it at a point other than the control point.

No special discussion of control valves is necessary; however, care should be exercised in selecting a valve with good flow characteristics and of a size suited to the application. It is definitely poor practice to size a gas control valve by making it the same size as the gas line because an over-sized valve will make it difficult, and sometimes impossible to get good control results. Every gas control valve should be sized by actual calculation, taking into account maximum gas flow, gas pressure, and pressure drop through the valve.

Gas company engineers can do their customers a worthwhile service if they will see that all burners are properly sized for each individual job and that the gas supply to each burner is properly regulated so the gas pressure will remain reasonably constant. This is particularly true in the smaller plants where the control problem is not thoroughly understood and any attempt on the part of the control engineer to get the plant personnel to eliminate such contributing factors to poor control is often just looked upon as merely an excuse and no action is taken. The gas company engineer has the required knowledge and the confidence of the customer to do him a real service along these lines and at the same time make it possible for natural gas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to give a good account of itself.

The above types of industrial gas controls in general cover the majority of temperature control applications to be found in war plants. However, there are several refinements that have found rather wide usage in this work because of the rigid standards set up by the Government.

One of these is the Radiation Tube which takes the place of a Thermocouple and makes it possible to measure the temperature of the work itself, such as a shell forging, rather than the temperature of the atmosphere surrounding the work as is the case with a Thermocouple. This Radiation Tube consists essentially of a heat-resisting lens, a compensator and a Thermopile. The energy radiated from the hot object falls on the lens and is focused on the Thermopile which generates an electromotive force proportional to the object's temperature. The compensator corrects for ambient temperature fluctuations surrounding the Radiamatic Tube, and the Potentiometer, therefore, indicates or records true object temperature. It is recommended for those applications where: vibration and mechanical shock break the conventional-type Thermocouples, work moves or rotates, furnace conditions are unfavorable, or temperature is above the Thermocouple range of approximately 2900 degrees F. The Radiamatic Tube can measure temperatures up to 3200 degrees F.

Another refinement is the Time-Cycle or Program Control. This type of control system is used where time and temperature are important factors in producing desired results. Stress relieving in the treatment of metals is an excellent example. In such an application, a Program Control Potentiometer will automatically raise, hold or lower temperatures according to a predetermined schedule. This is accomplished by incorporating a timer mechanism with any one of the Potentiometer control systems discussed previously. It can readily be appreciated that a control system such as this, which practically eliminates the human element entirely, is of tremendous help to the small plant that is engaged in war work. In fact, of such importance is this refinement in control that the Government is requiring that it be used in at least one particular phase of war production work.

In addition to these particular industrial gas controls that are finding wider usage in industry as a whole under the war program, we have the Thermometer Controllers for temperatures up to 800 degrees F., Pressure Controllers and Safety Controls. Since these controllers are being used in about the same way in war plants as they were during normal times and since the average plant personnel has a fair working knowledge of these controls, no detailed discussion will be given here.

From the foregoing it would appear that the average industrial plant engaged in war work has nothing to worry about when it comes to automatic controls for gas fired equipment. Such might be the case if all equipment, including controls, was correctly specified, installed and operated. However, conditions being what they are, I am afraid much equipment is now in operation that could be doing a better job. In many instances the user is probably not aware that better performance is possible with resulting improved product and increased production. With access to these plants becoming more and more restricted, it is difficult for equipment manufacturers to know where assistance might be needed. On the other hand, the gas company engineer is usually consulted if any new gas fired equipment is to be installed and is also given rather free access to the plant after the equipment is operating. It would appear therefore that the gas company engineer can render his customer a very worthwhile service by acting as his engineer, and when advisable, calling in the equipment manufacturers in order to get the best possible service out of every piece of equipment.

Presented at Industrial and Commercial Session 37th Annual Natural Gas Convention, New Orleans, May 4-7, 1942.

Register of the British Gas Industry

The 1942 edition of this annual directory, a bound volume of 250 pages, has been issued. It includes a list of holding companies and of operating companies, their equipment, output, rates and officials in Great Britain and Ireland. Also a list of Gas Associations and their officials at home and abroad. A directory of manufacturers of gas equipment is included. Size 9 x 12, cloth bound. Published by The Gas Times, London.

The Gas Industry in Australia and New Zealand

The statistical year book of Australia and New Zealand gas industry for 1940 has been issued by The National Gas Association of Australia at Melbourne. It gives a complete tabulation of companies and products, showing relative growth over a period of ten years. Size 8½ x 13, flexible cover.

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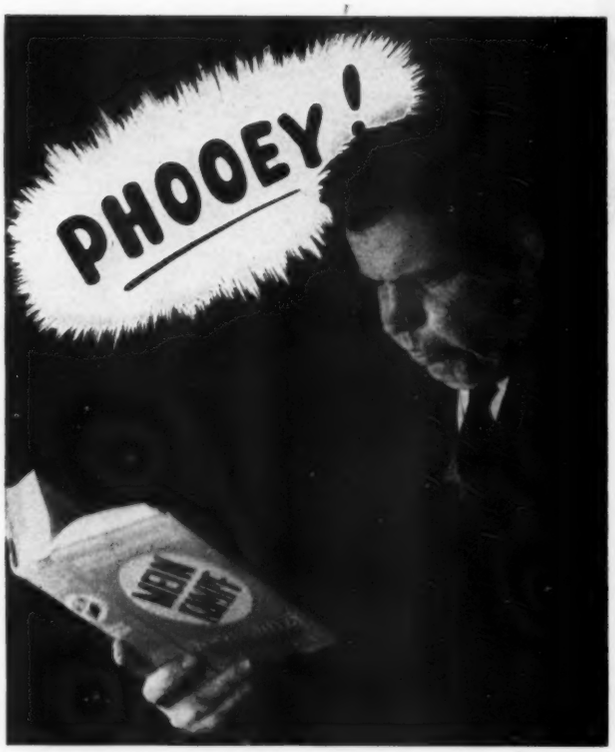

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Marketing Problems Under War Conditions

By
Harold Vinton Coes
Vice-President
Ford, Bacon & Davis, Inc.
New York

THE SUBJECT which your committee assigned to me covers a lot of territory. The most that I can hope to do is to outline in broad terms and briefly discuss the more important problems of marketing under war conditions. There are a host of other problems, of lesser importance, some peculiar to an industry as a whole and some confined to one or more components of an industry. The basic problems, however, are common to all.

Business and Government In the War Effort

James H. McGraw, president of the McGraw-Hill Publishing Company, in a recent editorial, made some arresting statements about business, government and the war effort. These provide a good background for our discussion. He states:

"A business enterprise is not, as many seem to think, just a profit machine. It is not set up and operated by its owners and managers for the sake of this month's or this year's profit without regard to any other considerations.

"The fact is that any worth-while business must operate as a going concern. It consists not only of stockholders and managers, but also of employees, markets, distributors and dealers. Mostly, I might say, of markets, distributors and dealers. They are the reason for being of any business, the source of its payrolls and profits.

"No competent management wants to scrap such essential elements of its business just for the sake of war bred profits, however large they might look. Most of the original reluctance to get into arms production, for which industry has been criticized, was not due to greed for profit as has been charged. Rather did it arise from management's mistrust of war profit that can be made only by sacrificing the essential elements of a healthy business.

"Government should do all it can to help management conserve those assets of business that will contribute to post war construction, when that can be done without prejudice to getting on with the war.

"Let me explain. Broadly speaking, every business comprises three elements. One is its tangible assets, its factories, machinery, equipment and materials. Another is its production capacity — its management, organization, trained working force. A third is its intangible assets — the good will, familiarity, acceptance and recognition that it enjoys amongst its dealers, customers and prospective customers.

"When the nation goes to war government becomes the one dominant customer of business. Of these three elements, the first two,—plant facilities and organization become of paramount importance to the job in hand. But so far as the government buyer is concerned, the third drops to minor importance.

"No one questions the right of government to restrict arbitrarily the amount of earnings that a business may retain as profit from its war activities . . . or its right to become the dominant partner in any business that may be needed to win the war. . .

"But as it does all this, government should remember that the survival of that business is staked on the public's knowledge and use of those discontinued or commandeered products, on the stability of the crippled dealer organization, on the ability of the business to maintain its standing in a market place from which, temporarily, it may be debarred.

"And government can help management to deal with the exacting task it now faces, if it will do all it can to avert the needless sacrifice of business interests that do not conflict with war needs, if it will but remember that one of these days, that business again will be on its own, gathering up whatever resources it may have left, recreating its markets, rebuilding its distribution channels, reestablishing itself as a going concern and doing all this in a competitive world without benefit of war orders. The only foundation upon which any business can hope to rebuild when that day comes is its customer's memory of its name and their understanding of its products. Whatever credit may be coming to it for its war effort will not avail it very much if it permits itself to be forgotten. Its chief assets in that day will be the identity, recognition and acceptance it still enjoys amongst those to whom it must look for business.

"That is why so many business men, already going all-out on their war jobs, become apprehensive, whenever some word or act of a legislator or government official seems to question the validity of their sales promotion and advertising activities during the war. For they know that it is by such measures alone that any management can hope to conserve—while its business goes to war—the values it will need when it returns to civilian service."

The foregoing is such a clean cut outline of one of the major problems confronting business that, at the risk of repetition to some of you, I deemed it worthwhile to call it to your attention as a basis for discussing some of the component parts of the major problem outlined in Mr. McGraw's statement.

National Income Under War Conditions

Our total production of manufactured goods in 1940 was approximately 15 per cent greater than in 1939, and 1941 production will probably show an increase over 1940 of 30 to 35 per cent. Total production of manufactured goods for 1942 will undoubtedly show similar large increases over 1941.

Therefore there probably is going to be greater annual national income, possibly attaining a level of 115 billion dollars. However, substantial portions of this income are going to be syphoned off in taxes, and some of it, possibly, in enforced savings of a non-spendable form. There will be available in the markets less consumer goods, particularly of the durable and semi-durable types. The net effect of these economic forces will be to lower the present standard of

living, reducing it perhaps, in a shorter time than is generally realized, to as low a level as that for the year 1932.

This will bring about problems such as the following:

1. The government becoming largely, if not entirely the only customer for many producers and suppliers.
2. Partial, if not complete withdrawal, from the normal markets for some companies.
3. Disruption of sales forces and decline in training value.
4. Reorientation of advertising and sales promotion plans to suit new economic conditions.
5. Large volume as compared with normal with corresponding demands for working capital.
6. Risk involved in large contracts with long deliveries at firm prices.
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10. The necessity of reestablishing men back from the armed forces.
11. Anticipating what the effect of augmented production facilities will be.
12. Necessity for developing post war plans and cooperating with groups in this activity.

Distribution Problems

I believe that many of the key men in the government are fully aware that the distributor standing in between the producer and the consumer is an essential and important link in our economy, and as such must not be driven out of business by the rules, regulations and practices promulgated for the direction of the war effort.

One of the most valuable assets of every established business and the most difficult to replace is the distribution mechanism it has created including trade contacts and channels, the prestige of its product, the brand or trade mark, the producer's reputation and the good will it has created in the minds of its customers and the general public.

Problems of the Sales Organization

Probably no function of business, under today's conditions is confronted with more questions of policy or faces a greater challenge than marketing and distribution.

Some of the more important of these problems of the sales organization are:

1. How to advise customers to obtain full benefit from a company's products.
2. How to introduce substitute products for those now having a consumer acceptance.
3. How to build confidence in a company and recognition for the products it is permitted to produce and distribute.
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Many companies are directing their sales promotion efforts and material to advising customers how to obtain full benefit from the products now in the hands of customers and are utilizing their sales forces in these educational campaigns.

Sales promotional efforts, advertising and the salesmen are being mobilized to educate consumers in the acceptance and use of products developed from non-critical materials as substitutes for those familiar and accepted products now denied to consumers on account of the restrictions on critical materials. Managers are utilizing the good will established in the past, the company's reputation for fair and honest dealing and the acceptance of its products in introducing its modified or substitute products. They are keeping in close touch with their customers to ascertain their problems and difficulties, to see how they can help them not only with new and substitute products, but also in keeping up the morale of the personnel of the individual distribution units during these trying times. No mean task, but highly important.

Sales managers who have painstakingly developed over a long period a highly trained and competent sales force recognize the absolute necessity of maintaining at least the nucleus of such an organization despite the inroads due to the draft or enlistment and to the fact that in many cases the salesmen cannot be used in their customary capacities. Salesmen that are to be retained are being trained to assist over-burdened purchasing departments in procurement operations; or assisting depleted service organizations, by being trained to take over certain servicing functions, or acting as liaison men between the prime contractor and sub-contractors; or in assisting overworked personnel departments in some of the tasks in the procurement of personnel for rapidly expanding production organizations; or in carrying out important tasks in a public relations campaign to preserve and maintain the company's prestige and good will and to keep its name ever before the public even though some or all of its products are temporarily withdrawn from the market.

Some companies recognizing the revolutionary shift in markets that is now taking place, realizing that sales quotas and sales potentials are now meaningless in many cases, and that they must secure first hand authentic information on what the present and post war market conditions are likely to be, are using salesmen in market research. This should be done with great care, guarding against the salesmen's natural optimism, their tendency to exaggerate, to cut corners and to guess the answers or to accept information that coincides with their ideas rather than with the actual facts.

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from a careful study of the technique of your best salesmen) or in knowledge of how to meet the conditions that will arise in the post war era, such as thorough knowledge of the products the company then plans to distribute. Training is also being given to the salesman in better use of his time. In one case a study by trained observers of how salesmen utilized their time, showed the following results:

Only 25 per cent of the average salesman's time was used in productive work, as compared with 45 per cent, or nearly double, for the salesman in the top fifth.

Planning the calls increased dollar volume over 200 per cent.

Without planning the average salesmen sold only 20 per cent of the prospects, with planning he sold 48 per cent of the prospects called on.

In some cases the management is tackling the problems of salesmen's transportation and the restricted supply of products by carefully analyzing their customers' accounts and location, selecting those accounts and those locations that can best be served under the existing conditions and rerouting the salesmen. Some are studying routing, doubling up salesmen in transportation, reducing the number of calls, making more use of the telephone and telegraph, more use of carefully designed sales letters to procure orders. Others have eliminated the use of cars in congested areas, traveling some of their men on delivery trucks, closing up nonprofitable territories. Experiments are being conducted in group selling, in the elimination of off routes, back calls and special services. Salesmen themselves have many worthwhile practical ideas on these subjects and should be consulted. Customers also are glad and willing to coperate and they too have ideas.

In none of the foregoing have we raised the question of salesmen's compensation plans. It goes without saying that probably in the majority of instances these plans will have to be overhauled. On account of the injustices that have arisen or are sure to arise, under the existing conditions, temporary arrangements providing an equitable solution undoubtedly will have to be made for the duration. Conditions which permit some salesmen to earn several times their normal total compensation, while at the same time penalizing others, will do more to damage the sales force morale than almost anything else. There is no one solution, no one plan. Each case will have to be worked out on its own merits. But worked out it should be and at no remote date.

Some companies are utilizing their sales vice-presidents or general sales managers and some keymen in the sales organization as project managers for a special war project, or as material procurement managers, or as special assistants to the president. Some sales managers are being made responsible for the maintenance of the morale of the organization, particularly the production workers, for the poster programs, suggestion and reward systems and the like.

The Advertising Problem

One authority sums up the problem of this important normal function in our economy of distribution as follows:

"Advertising, always an important factor in elevating and maintaining our standard of living and making the nation's industries conscious of their interdependence, now more than ever assumes a responsibility that cannot be over estimated."

The Advertising Federation of America states that American Advertising has these four major functions to perform:

1. Continue advertising's indispensable role in the process of distribution and in the maintenance of the business structure.

2. Guide consumer demand to channels most readily supplied and away from scarce materials.

3. Assist the government directly in the appeals to the people on specific war efforts.

4. Help maintain public morale.

That advertising should be stopped, as unfortunately is suggested in some governmental quarters, is in my opinion unsound. Our experience in the last World War demonstrated this. Seventeen case histories were studied in which once prominent advertisers were practically eliminated from the post war market, because the prosperity from an oversold condition due to war conditions led them to believe that advertising was no longer necessary. The consumer has a short memory. Experience has generally shown that no company that has discontinued advertising permanently has been able to hold a position of leadership in its industry or to maintain its position in the markets. Once a position of leadership is lost through failure to continue advertising aggressiveness, it is almost impossible to regain it.

This does not mean that the emphasis of the copy or its direction should not be changed. It does mean that the emphasis in many instances must be removed from products no longer available, and placed on the producer by focusing attention on what the producer is doing in the war effort, on the absolute necessity for his withdrawing from the normal market, on the stressing of service and on aids to the consumer in effectively maintaining the products now in service. In other words, use advertising to keep the institution before the public. This partakes of a public relations task rather than one of product sales promotion. It seems to me that here the public relations counselors and the advertising experts jointly can perform a service of such worthwhile proportions that it is difficult to understand why any producer who has been well entrenched in the national market and who has spent millions over a long period in advertising and sales promotion to gain and maintain his position in the market should suddenly decide to black himself out in the consumers' mind. This does not make sense unless it is predicated on the assumption that war production is to be the normal avocation of all of us for the remainder of our business lives. Neither does this make sense. It ignores faith in ourselves and our Allies to so organize our production, our war effort and our military forces as to ultimately completely overwhelm our adversaries. When that time comes, as it most certainly will, we must be in position to rapidly and effectively about face and deal with not only dammed up demands in our national markets but in the world markets as well.

An Interesting Survey

The Psychological Corporation tried a few experimental questions in one of its nationwide surveys, with the customary proportional sampling of economic levels. A summary of the results of this survey was presented at a marketing conference of the American Management Association and as these results are somewhat indicative of post war conditions and trends I desire to call them to your attention.

The sample represented approximately 20,000,000 urban families.

54% rent their homes or apartments; however, in the upper income levels 73% own their homes, while only 20% own them in the lowest levels.

Of the 46% owning their homes, 17% were planning to paint the outside of homes, Over 13% were planning inside papering, painting, remodeling, roof repairs, insulating,

etc. 16% of all families were planning purchases of semi-durable goods for their homes. 9% had planned to purchase a radio, 7% new washing machines, 7% new vacuum cleaners and the majority of these purchases were to be made by the middle or lower income groups.

The next phase of the analysis is with reference to brand preference and this shows the opportunities open to manufacturers, advertisers and sales forces.

43% of the probable purchasers of washing machines did not have a specific make in mind.

For radios and vacuum cleaners the percentage was 38%. However the analysis showed how well some manufacturers were doing in securing brand consciousness. Five radio manufacturers have the edge and probably account for 75% of the market. Four washing machine manufacturers account for a sizable share of the market, while two vacuum cleaner manufacturers account for the majority of the business.

Application to the Natural Gas Industry

In the foregoing we have discussed, in broad general terms, marketing problems under war conditions as affecting industry as a whole. Now let us take a few moments to discuss the application of the conclusions to the Natural Gas Industry.

Natural Gas and the Chemical Industry

The natural gas industry, as one of the base sources of raw materials for the chemical industry, is, whether it recognizes it or not, to some extent in the chemical business. This basic fact is of far reaching importance in determining what the ultimate marketing policies of the industry may be.

Chemists are doing amazing things in developing new products by the rearrangement of the molecular structures of hydro-carbons. We have as yet no adequate idea what the future holds in this interesting field. We are perhaps only on the threshold of developments of far reaching importance, not only from a scientific viewpoint but from the effect on our economy. The present war demands are greatly accelerating these developments.

Natural gas as a mixture of hydro-carbons is a good source for some of these developments. In some cases the chemical products can be stripped from the gas, leaving the gas itself still available as a fuel, or as a source of still other chemical raw materials. In other cases the gas itself is involved as a raw material for other chemical derivatives.

The indications are that the demand for natural gas as a chemical will increase, but even so will probably take only a fraction of the gas produced.

Butane as a fuel is probably out during the emergency due to the demand for it as a raw material for essential war products chemical processes. Methane on the other hand will probably continue as a fuel not only because of the supply, but on account of the fact that it does not yet lend itself so readily to conversion to other chemical products.

It is quite possible that after the war the United States will be in position to supply economically the bulk of its rubber requirements from synthetic products. This condition may pertain also to other products whose base source for some of the raw materials is natural gas. If these conditions do prevail they will naturally have an important effect upon the marketing, distributing, sales, sales promotion, advertising and sales policies of the industry and its component parts.

Restrictions in the Natural Gas Market

In the natural gas industry there may come a time, if it is not already here in some instances, where the war demands will necessitate the curtailment of sales of gas to civilian and to some types of commercial and industrial consumers, in order to divert the supply so released to industrial plants essential to the production of war materials. The industry may be called upon to create new facilities for the production and distribution of natural gas to essential industrial plants.

It may develop, where the conditions are favorable, that some gas lines will be utilized to transport oil or gasoline during the emergency, or for a portion thereof. Whole lines may be taken up and relaid in other locations depending upon the circumstances, such changes will disrupt the present supply and existing marketing arrangements. In other cases a substantial supply of gas may be diverted to a particular industry. It seems to me that any or all of these things can happen. This will mean that you may have to withdraw wholly or in part from some markets and increase your participation in others. Naturally markets from which you are forced to withdraw or curtail supply will not like it. You may be unjustly blamed for the withdrawal or the curtailment. You are, therefore, bound to be confronted with a public relations problem in endeavoring to inform the market, in an intelligent and direct manner, of your problem and the reasons for the steps taken. You should endeavor to maintain and retain the market's good will pending the time when you can again serve it, the time when you will need them and they will need you.

It is quite possible that such restrictions and changes in operation will bring about functional competition which you may have to meet at a later date. The market may become inured to the substitute products, rendering it difficult to subsequently dislodge this functional competition.

This phenomenon will not be confined to your industry, it will be prevalent in many industries. Some far sighted managers are already having studies made for developing plants to deal with the situation when the time arrives and they are in a position to do so.

However natural gas is preeminently such an ideal fuel that in all probability the market will still be there after the present emergency is over.

The problem ad interim is to develop, with those of your customers who are cut off from supply or those whose requirements are seriously curtailed, a sympathetic understanding of your predicament and the important reasons why you have had to inconvenience them by the action you were compelled to take.

Shift in Markets

Now with regard to the current shift in markets. This is taking place in two divisions:

(a) The civilian consumer market
(b) The commercial and industrial market

When new industrial communities spring up, where none existed heretofore, the problem is one of determining the extent to which it is essential or desirable to cultivate the market for gas if it is available. This in turn would depend upon whether a substantial portion of the potential of this new market will exist post war or not. It may develop that the shift in population away from consumer markets already developed is causing or will cause a serious drop in sales volume, so that it is advisable to compensate for this by de-

(Continued on page 44)

War Production Board

Division of Industry Operations

Order L-23-c

Production of Domestic Cooking Appliances

THE War Production Board, May 14th, for the first time adopted the principle of "concentration of production," ordering an end to the manufacture of domestic cooking appliances by large producers after July 31, and permitting the production of a limited number of simplified and light-weight models by smaller companies for civilian use.

The order (L-23-c, effective May 15) thus releases the facilities of the larger firms for war production and permits the essential civilian needs for cooking and heating stoves to be met by the smaller firms. In addition, about 350,000 tons of iron and steel, on an annual basis, will be conserved for war needs.

Another unusual feature of the order is the designation of 39 "labor shortage areas" in fifteen states. Any firm—large or small—located in these areas must discontinue production of cooking and heating stoves after July 31.

The order covers the entire domestic cooking appliance industry (except electric), and the entire domestic heating stove industry (except electric), and establishes these three classes of manufacturers:

Class A—Those whose factory sales value for the year ending June 30, 1941 totaled $2,000,000 or more.

Class B—Those wnose factory sales in the same period totaled less than $2,000,000, and who are located in labor shortage areas.

Class C—Those whose sales in the same period totaled less than $2,000,000 and who are *not* located in labor shortage areas.

In each case, the factory sale value applies to both domestic sales and exports.

Eleven general restrictions are set up by the order:

1. After July 31, no person is permitted to manufacture any domestic cooking appliances except "Permitted Types." The order defines permitted type gas ranges, gas hot plates, coal and wood ranges, combination ranges, kerosene ranges, gasoline ranges, kerosene stoves, gasoline stoves, kerosene table stoves, gasoline table stoves, and portable ovens. Simplification and reduction in weight is ordered for each permitted type or unit.

2. After July 31, Class A and Class B manufacturers may not produce any domestic cooking appliances or any domestic heating stoves.

3. During the period January 1 to July 31, 1942, Class A and Class B manufacturers may use in domestic cooking appliances no more than six times the average monthly consumption of iron and steel in the year ended June 30, 1941.

4. During the period May 15 to July 31, Class A and Class B manufacturers may use in domestic heating stoves no more than three times the average monthly amount used in the base period.

5. Effective May 15, Class C manufacturers of domestic cooking appliances are limited to a monthly iron and steel use of 70 per cent of monthly average use during the base period.

6. Effective May 15, Class C manufacturers of domestic heating stoves are limited to a monthly iron and steel use of 50 per cent of the monthly average use during the base period.

7. After July 31, the average weight of iron and steel used per unit by any manufacturer of domestic heating stoves must not exceed 70 per cent of the average weight of iron and steel per unit produced during the base period.

8. After July 31, the average weight of iron and steel used per unit by any manufacturer of permitted types of coal or wood ranges must not exceed 70 per cent of the average weight of iron and steel per unit produced during the base period.

9. After July 31, no manufacturer of domestic cooking appliances is permitted to produce more than one model of permitted type gas range.

10. Permitted type gas ranges must be manufactured so as to comply with the performance and safety requirements set forth in the American Emergency Standard Approval Requirements for Domestic Gas Ranges Z21.ES 1942.

11. Use of any iron or steel in the production of cover tops or lids for the cooking surfaces of domestic cooking appliances or the production or assembly of any domestic cooking appliances equipped with such cover tops or lids is prohibited.

The WPB Plumbing and Heating Branch, which is administering the L-23-c order, said that present civilian and defense requirements for cooking and heating stoves are a small percentage of the normal productive capacity of the industry. In a normal year there are produced approximately 4,000,000 cooking stoves and 3,500,000 heating stoves, representing a total volume of $215,000,000.

It is estimated that there are at present approximately 1,200,000 new stoves in existence, and in the period to July 31, an additional 800,000 will be produced. The total of 2,000,000 stoves is expected to satisfy the essential requirements for at least a year. All manufacturers are permitted to continue without restriction the production of repair and replacement parts.

Of the production of permitted types by firms which will continue to manufacture cooking and heating stoves, approximately 75 per cent will be available for civilian use. This is believed to allow a sufficient number of stoves for all essential civilian purposes.

The requirement that all firms in tight labor markets discontinue production in order to relieve a severe labor supply situation, together with the cessation of stove production by the larger companies is expected to release about 25,000 workers for war industry. The industry as a whole normally employs 35,000 people.

The labor shortage areas are as follows:

Alabama—Huntsville.

California—Beverly Hills, Culver City, Huntington Park, Irvington, Los Angeles, Monrovia, North Hollywood, Oakland, Petaluma, San Francisco, San Rafael, Stockton.

Connecticut—Hartford, New Britain.

Indiana — Indianapolis, South Bend.

Kansas—Wichita.

Maine—Portland.

Maryland—Baltimore, Perryville.

Michigan—Milan.

New Hampshire—Salmon Falls.

New Jersey—Cranford, Newark, West Berlin.

New York—North Tonawanda.

Ohio—Akron, Cleveland, Massillon.

Oregon—Portland.

Pennsylvania — Erie, Lansdale, Middletown, Philadelphia, Pottstown, Royersford.

Washington—Everett, Seattle.

The Plumbing and Heating Branch estimates that 92 companies out of a total of 245 affected by the order will be required to discontinue stove manufacture after July 31.

Air Conditioning and Commercial Refrigeration Equipment—Limitation Order L-38

The War Production Board, May 15th, banned new installations of air conditioning and commercial refrigeration equipment except to meet war and essential civilian requirements.

New installations designed solely for personal comfort, such as in theaters, restaurants, hotels, etc., will not be permitted.

Limitation Order L-38 also places rigid restrictions on the production and sale of air conditioning and commercial refrigeration equipment.

For the next 90 days, only the Army, Navy and Maritime Commission will be entitled to contract for production of such items as beer dispensers, carbonated beverage dispensers, bottled beverage coolers, low temperature mechanical refrigerators designed to store frozen food or to "quick-freeze" food, individual room coolers, florist boxes and display cases, and fountainette-type soda fountains. After that time, production of these items must be stopped completely.

Order L-38 prohibits the installation, effective immediately, of any new equipment except on "preferred orders." These orders apply only to the Army, Navy and Maritime Commission, certain other government agencies, Lend-Lease requirements, and persons possessing a preference rating of A-9 or higher issued directly to them and designating the type of equipment desired.

From May 15 to June 30, producers are prohibited from manufacturing any items of equipment in excess of the number of such items delivered on preferred orders from April 1 to May 15, or in excess of the number of such items for which unfilled preferred orders are now on hand. Producers may use the greater of the two quantities in determining their permissible production.

During any calendar quarter beginning with the quarter July 1—September 30, producers may not manufacture more items of equipment than the number for which they have preferred orders on hand, or the number delivered on preferred orders during the next preceding quarter, whichever is greater.

The order places no restrictions on sales, leases or deliveries of new equipment by a dealer to another dealer, or to a producer, or by a producer to another producer, or to a dealer, but both producers and dealers are prohibited from selling, leasing or delivering to any other person or from installing any new equipment except to fill a preferred order.

The order will not interfere with production or installations to cover health requirements, such as food processing and storage.

In considering applications for preference ratings under the order's terms, the branch will consider the following uses of equipment as "essential":

1. Processing, transportation, storage, preservation, and distribution of food and food products only in those expanding defense communities where adequate minimum facilities do not exist in the opinion of the War Production Board.

2. Production, processing, transportation, storage, preservation, and distribution of milk and dairy products. (This does not include equipment for the manufacture, sale, or distribution of ice cream, frozen confections, carbonated or malt beverages.)

3. Mining, manufacturing processes, communication equipment, and processing methods (including water and liquid cooling) where control of temperature or humidity can be proved necessary for production of the product or products.

4. Ice manufacture and storage only where, in the opinion of the War Production Board, adequate facilities do not now exist.

5. Miscellaneous applications in connection with testing and research laboratories; defense production drafting rooms which can demonstrate proof of actual need; operating rooms in regularly constituted hospital buildings; preservation of drugs, medicine and serums, mortuaries (body storage); production inspection test rooms.

Toluene

To provide manufacturers of TNT and other war materials with an additonal 200,000 gallons of toluene per month, an amendment to General Preference Order M-34 was issued May 22nd by the Director of Industry Operations.

Toluene is an important by-product of coal coking and oil processing. The amendment directs every person who cokes coal or processes oil to operate his plant so that the maximum amount of toluene will be produced. Every such person is forbidden to sell, use, or deliver any oils containing toluene until the maximum amount of toluene has been extracted, or unless the purchaser is equipped to extract the toluene himself. Oils from petroleum sources are not affected. "Oils," for the purposes of this order, mean drip oil from the gas industry, and light oil produced in coal coking.

Toluene is an important ingredient of the explosive TNT and is used in airplane "dope", drugs, and many

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other products. Current progress of the munitions production program indicates a need for larger quantities of toluene. It is expected that this increase in production will eliminate any possibility of serious shortages.

The original Order M-34 placed all supplies of toluene under allocation control. No change in the allocation procedure is included in this amendment.

(Amendment No. 2 to General Preference Order M-34)

(a) Section 974.1 (Amendment No. 1 to General Preference Order M-34) is hereby amended as follows:

Paragraph (c) is hereby amended to read as follows:

(c) Production of toluene. (1) Subject to the provisions of subparagraph (c) (2) hereof, every person shall, in coking coal or in processing oils containing toluene, so operate his equipment and facilities that the maximum amount of toluene capable of being produced with such equipment and facilities (from the coal coked or from the oils processed by such person) shall be produced.

(2) After February 1, 1942, producers of toluene shall so operate their production facilities that, of the toluene produced during any month, the maximum amount of nitration grade toluene capable of being produced with such facilities shall be produced, and in no event shall the amount of nitration grade toluene produced be less than 70% of the total amount of toluene produced.

Restrictions Eased on Sale of Plumbing, Heating Equipment

The War Production Board has moved to relax the restrictions which were imposed on the sale of plumbing and heating equipment in limitation order L-79 by removing the ban on equipment necessary for civilian needs.

One important effect of the order as amended is to release the sale to householders of cooking and heating stoves and water heaters where no other equipment for these purposes is available.

At the same time, the amended order facilitates the conversion of oil and gas burning equipment to the use of coal by permitting the sale and delivery of any equipment—for instance, grates—needed to convert such burners to the use of coal.

The original regulations forbade all sales of plumbing and heating equipment amounting to more than $5 per item on unrated orders so as to give the plumbing and heating branch an opportunity to study the needs for war production and essential civilian requirements. The revised order permits the shipment until June 30 of equipment for bona fide contractual orders which had been received no later than April 16, the date of issuance of the original L-79 regulations.

Another exemption from the previous provisions permits delivery of plumbing and heating equipment until July 31, 1942 for completion of projects started after July 31, 1941 and through April 9, 1942, if the purchaser certifies the necessity of such equipment. (April 9 was the date of issuance of L-41 the construction limitation order.)

Hot water heaters, radiators, and other types of equipment which use electricity are excluded from the terms of the amended order.

Sale and delivery of any cooking or heating stove or water heater is permitted if the purchaser certifies that such equipment is needed for use in his place of residence, and that there is not available to him any other equipment which could be used instead.

Office of Defense Transportation Division of Motor Transport

Replacement Parts for Trucks and Buses

Much can be done to avert possible shortage of replacement parts for trucks and busses, according to John L. Rogers, Director of the Division of Motor Transport, Office of Defense Transportation, through conservation and rebuilding of worn parts by methods known and practiced by many fleet operators.

A thorough knowledge of these modern reclaiming methods is of inestimable value at this time of shortages in vital metals. The building up of worn areas by approved methods rather than scrapping entire units because of such wear is of definite value when new parts will be increasingly difficult to secure.

"The Maintenance Section of the Division of Motor Transport," said Mr. Rogers, "has offered valuable suggestions, all based on long practical experience in parts rebuilding, which we feel should be studied and put into practice by truck owners and garages servicing equipment."

Parts-reclaiming procedures:

1. A drive shaft, worn at the joints because of neglect, need not be scrapped. It can be rebuilt. Two new universal joints to replace the worn parts may be welded to the old tubes to make a serviceable assembly. If the splines on the old tubes are

(Continued on page 43)

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Technical Conference Pacific Coast Gas Association

The spring technical conference of the Pacific Coast Gas Association was held May 21 and 22 at the Ambassador Hotel, Los Angeles, Calif. Many important subjects were covered in the various papers presented.

Amongst them was the "Adjustment of Customer Service to Wartime Conditions" by D. C. Ellswood, Southern Counties Gas Co. "Protection of Personnel and Property During the Emergency" by E. E. Ellis, Southern California Gas Co. "Modern Meter Proving Rooms and Methods" by E. M. Clovan, Pittsburgh Equitable Meter Co. "Cost of Cathodic Protection" by S. A. Wright, Pacific Gas & Electric Co. "Temperatures in Gas Transmission Lines" by R. V. Dunkle, Pacific Gas & Electric Co., and many others.

A. B. Newby, Southern California Gas Co. presented a paper describing the "Organization and Operation of Utilities Committee of Kern County Defense Council." Water, gas, electric and sewage disposal utilities come under the scope of this committee.

A representative of the Utilities Committee reports to the County Nerve Center on every yellow (warning) signal, and remains at that point, until the emergency is over. This representative has:

(1) A private telephone line from the Nerve Center to the Telephone Company's central office. His telephone is for outgoing calls, only. (This representative also has access to the short wave radios of the Sheriff, and the Fire Department, and to courier service, in the Nerve Center.)

(2) Maps showing the areas in the County in which the individual utilities operate, also showing the offices of the utilities to be notified in case of trouble in that particular area.

(3) Maps showing the facilities of the major utilities.

(4) Stationery forms for recording information received and transmitted during an emergency.

The Air Raid Wardens transmit information to the Nerve Center, during emergencies, as this is the headquarters office to which all County Air Raid Wardens report. It is the duty of the Utilities Committee representative to pass on, to the utilities affected or interested, that information vital to civilian defense in the maintenance of utility service. By referring to his maps, the representative is able to notify the utilities affected of trouble in a given area, by telephone, short wave radio, or by messenger service. In case normal lines of communication fail, the individual utilities can contact their representative through the local nerve center (every municipality has its own local nerve center), or, if there is no local nerve center in that particular area, through the Zone Air Raid Warden in that area. Utilities may relay messages to other district offices of their companies, in this manner also.

Supplers Breakfast

at Natural Gas & Distribution Conference, New Orleans—May 5

A quick survey of the attendance record of the Conference showed about 40 SUPPLERS on hand, and it was decided that a breakfast would be in order. Senior Warden Mulcare delegated Sergeant-at-Arms Grassman to round up the boys.

The following members responded to the call: H. O. Andrews, Norton McKean, C. B. Dushane, Bob O'Neill, Les Fairchild, W. Cheeseman, J. Delaney, R. Tomlinson, S. G. Krake, Craig Espey, W. Derwent, J. Gibbons, Paul Kreuch, Capt. Higgins, Joe Harper, B. Barnett, Fred MacMurry, Dave Sharp, J. Mansfield, Carl Sorby, Bill Hall, H. Grassman, Al Lindquist, and Joe Mulcare.

Suppler Derwent spoke at length on the matter of the appliance situation as it is in Washington, and gave some very helpful advice.

California and the Southwest, as well as the Midwest were well represented. Regarding the Eastern Supplers, there were eight Supplers on hand who attended the Boston breakfast—interest must be growing in the Gild, or it may be the menu.

Alderman Frank Packer could not attend—he was called back to Washington. In fact he left without his hat.

Senior Warden Mulcare reported on Membership, finances and the Purposes of the Gild. Supplers were requested to keep Wardens informed on any activities, in which they deem the Gild should participate; especially where fellow Supplers might be concerned.

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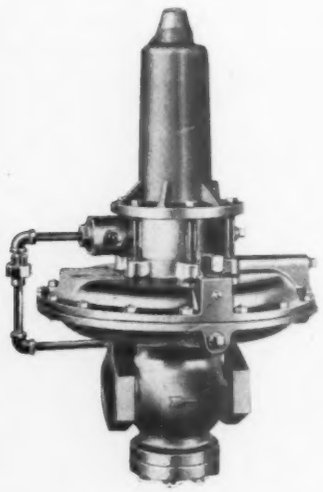
New Equipment and Appliances

High Pressure Regulator

The Pittsburgh Equitable Meter Company has announced the addition of a high pressure series to the present line of EMCO "1001" Gas Pressure Regulators.



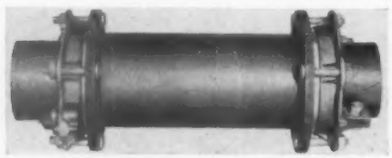
EMCO Regulator

As in the standard "1001" regulator, this model is furnished either for outlet or inlet pressure control. This high pressure series regulator, which provides an outlet pressure range of up to 60 lbs. per sq. in. maximum, is so designed as to cover the entire span between 5 lbs. and 60 lbs. with the same spring.

It is furnished in one size only with 2-inch threaded connection for standard pipe. The manufacturer states that this regulator can be used to control air, manufactured or natural gas. Descriptive literature available from the manufacturer, Pittsburgh Equitable Meter Company, 400 North Lexington Ave., Pittsburgh.

Bomb-Crater Clamp

Gas and water companies will be interested in a new device for quickly repairing mains where a gap has been blown out by explosion. The new clamp, known as the Skinner-Seal Bomb Crater Clamp, makes a tight, lasting connection between the ends of the broken main and a random piece of steel pipe cut to appropriate length, to fill the space.



Skinner Repair Clamp.

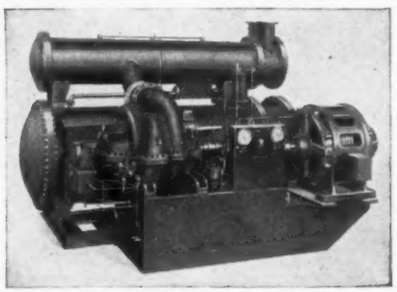
Developed by the M. B. Skinner Company, South Bend, Indiana, the new adapter makes use of standard Skinner-Seal Bell Joint Clamp parts to splice a proper length of steel pipe to fill in the gap in a broken main, with minimum delay. Illustration shows how connection is made between main and steel pipe at each end of gap. Note how flanges, welded to center tube, act as anchor rings for bolts.

Of interest, also, in connection with air raid precautions, the Skinner-Seal Split Coupling Clamp quickly repairs breaks in the main which are apt to occur for some distance on each side of the bomb crater.

Worthington Liquid Cooling System

Worthington Pump and Machinery Corporation, Harrison, N. J., has developed a new line of liquid cooling systems for air conditioning and industrial process requirements. The centrifugal compressor is of the volute design as opposed to the diffuser design that has heretofore been used in the centrifugal refrigeration field.

Many new and unusual features are incorporated in this design, notably dual lubrication, balancing of end thrust and side thrust by arrangement of impellers and volutes. These systems are available in sizes covering a range from approximately 150 tons refrigerating effect to 1200 tons refrigerating effect.



Liquid Cooling System

This product has had wide use in the National Defense Program in connection with air conditioning of "Black out" or controlled temperature plants for the precision manufacturer of air craft and air craft engines. Installations have been made in several aircraft plants.

Pipe Coating and Wrapping Machine

This new Wailes Dove-Hermiston machine is equipped with a gasoline-driven engine that propels it along the pipe line and applies a hot coating material together with suitable wrapping in the one operation.

Designed for comparatively long cross-country pipe lines, it travels up or down hill with ease, negotiates bends and is available for the larger sizes of pipe.

Full description in Bulletin 15 issued by Wailes Dove-Hermiston Corporation, Westfield, New Jersey.

News of the Gas Industry

Southwestern Gas Measurement Short Course Held At College of Engineering, University of Oklahoma, April 21-23, 1942

Due to war conditions and tire shortages, the enrollment at the Short Course this year was 565 in comparison with the enrollment of 700 last year. However, the percentages of attendance in class periods were greater than any previous year.

Twenty-two states and the Republic of Mexico were represented at the Short Course.

W. H. Carson, dean of the College of Engineering, University of Oklahoma was in charge of local arrangements and the banquet which 409 delegates attended.

Joseph A. Brandt, president of the University gave the Address of Welcome, after being introduced by W. L. Woodward, President of the Zenith Gas System, Inc., Burt R. Bay, President of the Northern Natural Gas Company, Omaha, Nebraska gave an address to the Assembly on the growth of the natural gas industry in the middle west. E. C. McAninch, Oklahoma Natural Gas Company, Tulsa, Oklahoma presented a report on "Odorizers and Their Operation." Other speakers at general sessions included L. K. Spink, Foxboro Company, A. D. MacLean, Pittsburgh Equitable Meter Company, G. M. Kintz, supervising engineer, U. S. Bureau of Mines, Dallas, Texas, J. J. Delaney, Reliance Regulator Corporation and Reford Bond, Chairman, Oklahoma Corporation Commission.

Mornings were taken up with Assembly where the entire enrollment participated, afternoons were filled with classes and demonstrations relating to measurement and regulation of natural gas, and handling and repair of equipment.

Cash prize winners for best papers on "What I Learned at the Gas Measurement Short Course" were: Walter E. Tucker, Continental Oil Company, Electra, Texas, $15, first prize; R. M. Van Horn, Lone Star Gas Company, Dallas, $10, second prize; five prizes of $5 each were won by: W. L. Lindsley, Kansas Power & Light Company, Manhattan, Kansas, R. L. Ledbetter, Continental Oil Company, Basile, La., B. H. Fowler, Phillips Petroleum Company, Bartlesville, L. T. Krueger, Northern Utilities Company, Casper, Wyoming and Charles C. Hurst, Arkansas Louisiana Gas Company, Shreveport, La.

The short Course was sponsored by the College of Engineering, University of Oklahoma, The Corporation Commission of Oklahoma, The Corporation Commission of Kansas, The Railroad Commission of Texas, The Oklahoma Utilities Association, the Natural Gas Section of the American Gas Association, and the Natural Gasoline Association of America.

Due to the growing importance of natural gas and oil to the war effort, and the increased interest in the short course, it is planned to hold it again next year.

Max K. Watson, assistant general superintendent, Canadian River Gas Company, Amarillo, Texas, was elected chairman of the General Committee for 1943 to succeed G. W. McCullough, Phillips Petroleum Company, Bartlesville, Oklahoma. Earl Kightlinger, Arkansas Louisiana Gas Company, Shreveport, Louisiana, was elected chairman of the Program Committee for 1943.

A.G.A. National Advertising

Plans for the seventh year of national advertising were approved at a meeting of the A.G.A. Committee on National Advertising held in New Orleans, May 3. Chairman Thomas J. Strickler, of Kansas City, was in charge of the meeting.

J. P. Leinroth presented the proposed commercial and industrial gas campaign. Mr. Leinroth is Chairman of the Advertising Committee of the Association's Industrial and Commercial Gas Section.

A second presentation dealing with the same subject was made by George Ketchum of Ketchum, MacLeod & Grove of Pittsburgh, advertising counsel for Mr. Leinroth's Committee.

Hugh A. Mitchell of McCann-Erickson, Inc., New York, described the plans for domestic gas advertising as previously approved by the Copy Committee. Companies shortly will receive schedules and advance reprints of the new campaign. In the meantime, a letter announcing the continuation of the advertising program will be mailed to all subscribing companies.

Members of the Committee on National Advertising and the Copy Committee who were present at the New Orleans meeting include: C. E. Bennett, J. F. Pollard, J. S. Spaulding, M. L. Sperry, J. V. Strange, H. Carl Wolf, R. T. Ratliff, T. H. Spain and W. G. Wiegel.

Michigan Consolidated Gas Co. Extends its Holdings in Michigan

Michigan Consolidated Gas Co. has purchased the gas systems in Mt. Pleasant, Clare, Ludington and Greenville from the Gas Corporation of Michigan, which will be dissolved.

Gas Corporation was owned by the Great Lakes Utilities, Inc., of Philadelphia.

The sale was reported to have been at a price of $700,000.

Ludington is the only one of the four units taken over by Consolidated not serviced by natural gas.

Public Service Co. of Indiana Elects Two Directors

Dudley R. Gallahue, president of the American States Life Insurance Company, Indianapolis, and Kurt F. Pantzer, a partner in the Indianapolis law firm of Barnes, Hickam, Pantzer and Boyd, were elected to the board of directors of Public Service Company of Indiana, Inc., at the annual meeting of the company's shareholders held in Indianapolis May 4th according to Robert A. Gallagher, president.

The two new directors will fill the vacancies caused by the resignations of Laurence K. Callahan of Chicago, who was recently commissioned a major in the U. S. Army Air Corps, and Leo S. Ganter, Jr., of Muncie, Ind., who will soon report for duty as a captain in the Army Reserve Corps, Mr. Gallagher said.

C. D. Byrd Joins U. S. Army

The Association of Gas Appliance and Equipment Manufacturers has added another recruit to the armed forces of Uncle Sam. Charles D. Byrd, who has been the Association's Chief Statistician since 1936 and well known in the gas industry, passed all the necessary requirements and has been accepted by the United States Army.

At present he is in training at Camp Chaffee, Arkansas.

E. M. De Remer and L. W. Tannehill Now in Consulting Work

E. M. De Remer has resigned his position as general supervisor of industrial sales in the Southern California Gas Company to become an engineer in the Fluor Corporation of Los Angeles. De Remer, in his new capacity specializes in problems connected with the oil and gas industry. These will include designing, engineering, and construction.

A graduate of the California Institute of Technology, De Remer was a pioneer in the sale of natural gas for industrial processes in Southern California during his career with the gas company. Through active service on gas association committees, he is recognized as an authority in that field.

R. B. Grossman, former commercial sales supervisor, succeeds him in the gas company.

Another resignation from the Southern California Gas Company sales staff is that of L. W. Tannehill, who has specialized in heating and air conditioning problems. He has become consulting engineer with the Holmes and Narver Company of Los Angeles, working on defense housing heating and ventilating projects.

Salt Joins the War of Production

The hot season is ahead—the season when, in the past, workers have wilted and production curves sagged under an oppressive summer sun. Production experts, industrial physicians and safety engineers are making every effort to safeguard the physical fitness of American workers—to see that there's no seasonal summer lowering of production and efficiency—no increases in accidents and mistakes. Until recently, one of the most baffling and serious causes of disability among employees has been heat sickness or heat cramps, particularly prevalent among workers engaged in hot, heavy work.

Research has shown that loss of salt from the body, through excessive sweating, is at the bottom of the trouble. Every body cell, the blood stream, the spinal cord, the brain, must contain a certain amount of water if the proper chemical balance necessary for normal body functions is to be maintained. Unless salt is present in the proper quantities, the various parts of the body cannot hold the necessary amount of water. When body salt is lost through excessive sweating and not replaced promptly, cells and other parts of the body lose water, upsetting the delicate chemical balance of tissue and body fluid. If the salt loss is slight, the first reaction will be a tired, uncomfortable, letdown feeling. If this upset condition is allowed to continue, however, actual heat sickness and muscle cramps occur, which are quite capable of causing death in extreme cases.

Doctors and nurses know that the sure cure for severe heat cramps is an intravenus injection of brine containing a high percentage of salt. The average person can obtain the necessary daily quota from the salt used in seasoning his food, but workers engaged in heavy work or long hours must have extra salt to compensate for the loss through sweating.

It is generally agreed by industrial physicians that the average worker needs, during the day, one level teaspoon of salt for each gallon of water he drinks.

Various methods are employed to supply salt to workers. The use of salt tablets and tablet dispensing machines, placed near drinking fountains or on portable water coolers, is the most convenient. The tablets contain regular table salt, compressed under pressure to a uniform 10-grain size, which is approximately the size of an aspirin tablet. They are swallowed whole with a drink of water. No salt taste is noticeable and the tablets dissolve within 30 seconds after being swallowed.

Educational posters, placed on bulletin boards and near drinking fountains, are used to point out to workers the importance of replacing salt lost through sweating, and encourage them to take salt tablets, throughout the day, whenever they take a drink of water. Eight 10-grain tablets is the equivalent of one level teaspoon of salt, which means that workers engaged in light to medium work will require from 4 to 6 tablets daily; workers in medium heavy work from 8 to 10 tablets; and workers in extra heavy, hot work from 12 to 15 tablets during an 8-hour day.

CONVENTION CALENDAR

June

4- 5 *Canadian Gas Association,* 35th Annual Meeting, Windsor Hotel, Montreal.

4- 5 *Pacific Coast Gas Assn.,* Sales and Advertising Section, Ambassador Hotel, Los Angeles. Calif.

11–12 *Pacific Coast Gas Assn.,* Accounting Section, Ambassador Hotel, Los Angeles, Calif.

September

28 *Pacific Coast Gas Association,* San Francisco.

29th to Oct. 1 *American Gas Association, Annual Meeting,* San Francisco.

H. W. Reed Elected Director A.G.A.

Hudson W. Reed, executive vice-president of The Philadelphia Gas Works Company, has been elected a director of the American Gas Association. He succeeds Conrad N. Lauer, president of the same company, who served the Association as president in 1939, and who has long been a director of that organization.

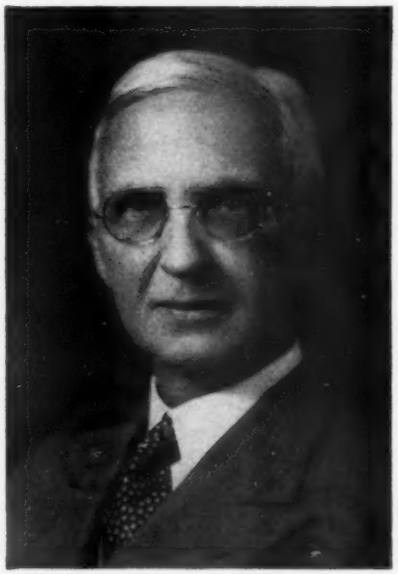
America's Nutrition Primer For Home Service Depts.

A special edition of this popular book by Eleanora Sense, Food and Nutrition Editor of The American Home Magazine is now available to members of American Gas Association at very low cost for quantity orders. Its sixty-four pages of interest to Home Service Depts., offer an excellent guide to modern nutrition.

Paper bound and saddle stitched the price is seven cents each for quantities from 100 to 1000 copies, and 6½ cents for 1000 to 5000 copies. On orders for 1000 or more, the Utility Company imprint will appear on the back cover. Orders should be placed through U. S. Sales Company, 341 Madison Avenue, New York.

C. N. Barney Elected Worthington Vice President

The board of directors of Worthington Pump and Machinery Corporation has elected Charles Neal Barney of Scarsdale, New York, a Vice-President of the corporation. A member of the Worthington organization from 1918, he has been treasurer since 1931, as well as the head of the corporation's legal department.

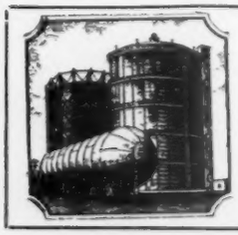


C. N. Barney

Mr. Barney formerly practiced law in Massachusetts and was a lecturer at Northeastern Law School and Boston University Law School. He is a member of the American, Massachusetts and New York Bar Associations, author of the law text "Equity and Its Remedies" and was, early in his career, Mayor of Lynn, Mass.

Pressure Gauge Accessories. The Brown Instrument Company, Philadelphia, Penna., has issued a new catalog No. 6706-A, "Thermometer and Pressure Gauge Accessories."

In the Brown Thermometer, Hygrometer and Pressure Gauge Catalogs, specifications and operating principles of the numerous types and models of instruments are fully covered.



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Permanent Injunction Granted Connelly

On May 4th a decree was handed down by the Court of Chancery, New Jersey, in the cause of Connelly Iron Sponge & Governor Company, Chicago, and Elizabeth, N. J., complainant, and Frank A. Sullivan, of the Poroxide Corporation, John S. Lawston, individually and trading as K-L Mill Supply Company, defendants.

This decree sustained the petition of the complainant. The decision of Alfred A. Stein, Vice Chancellor, read in part as follows:

"The defendants are Frank A. Sullivan, the Poroxide Corp. (formed by Sullivan who is the owner of all the stock with the exception of some stock held by 'dummies'), and John S. Lawston trading as K-L Mill Supply Co. Sullivan was an employee of the complainant and Lawston an agent of complainant, and together they conspired to filch the business of the complainant. After reading and considering the evidence the conclusion is reached that they succeeded measurably in their scheme and together they committed unlawful and fraudulent acts on complainant resulting in benefit and profit to themselves.

"There will be a decree that the preliminary injunction heretofore granted be made permanent and the defendants ordered to account to complainant for all their ill-gotten gains and profits, and for that purpose there will be a reference to a Master hereafter to be appointed to take and state the account."

Catalogs

Pipe Line Coatings. Bulletin 15 of Wailes Dove-Hermiston Corporation illustrates and describes their new line-traveling pipe coating and wrapping machine which incorporates many mechanical improvements and ideas in pipe line coating technique. For a copy address the Company at Westfield, New Jersey.

How Worthington Serves Industry. A 22-page bulletin has been issued by Worthington Pump and Machinery Corporation, Harrison, N. J. It outlines briefly, but is replete with illustrations of many Worthington installations in a variety of industries. Listed as Bulletin W.P.-1099 it is loose leaf form, punched for standard 8½ x 11 ring binder. Copy on request.

Rubber Lined Barrels. A new catalog section on its line of barrels and drums lined with rubber by the Vulcalock process has just been published by The B. F. Goodrich Company, Akron, Ohio, and is available upon request. The barrels and drums are used for the safe, economical handling of corrosives. The catalog section describes the properties and limitations of the Vulcalock drums and barrels, with details of construction and uses.

Koppers Products. Koppers Company, Tar and Chemical division, Pittsburgh, Pa., has published an eight-page folder which summarizes all of Koppers' important products, plants and services.

The list ranges from Koppers coals and coke to light oil plants and purification systems; from valves, castings, forgings, couplings and piston rings to roofing, tar-base paints, and pressure-treated timber products.

Two pages are devoted to the uses, technical description and characteristics of tar acids, tar acid oils, and coal tar solvents.

Protective Coatings: Protective Coatings, Inc., 10391 Northlawn, Detroit, Michigan, announces the first edition of "The Tocol Line," a booklet-catalog describing all of the products in the Tocol Line of protective coatings for metal, concrete, stucco, wood, paper, fabrics, etc.

In loose leaf form it contains over 40 pages of information in connection with the protection of raw materials, plant equipment and finished products.

Industrial Paints. A means of selecting the best paint without detailed technical study of properties of all finishes that might be suitable for a given application is provided in the Valdura Paint Selector, issued by American-Marietta Company, 43 East Ohio Street, Chicago.

The Selector makes information conveniently available on properties of, and all application data necessary to choose properly from 43 paint, enamel and varnish products. It folds to letterhead size. Convenient to keep on a desk top for reference, or to file for future use.

Industrial Pumps. Bulletin 29-A107 of Pomona Pump Co., Pomona, Cal., and St. Louis, Mo., is a 24-page brochure giving practical information on the adaptation of their vertical pumps in a wide variety of industries. These include handling water in gas holders, ammonia liquor in gas plants, dewatering manholes, etc. Practical drawings of applications are shown.

Obituary

DELMORE L. COBB

Delmore L. Cobb, 65, secretary-treasurer of Lone Star Gas Company and the last remaining executive who joined the company upon its founding in 1909, died suddenly May 9th at his home in Dallas, Texas.

Mr. Cobb was brought to Texas from Arkansas a year after his birth, his parents moving to Corsicana, the first Texas city to have natural gas service. He graduated from Southwestern University at Georgetown in 1898. His first step in the fuel industry was secretary of the Navarro Oil and Refining Company where he remained 10 years. Joining Lone Star thirty-three years ago, he had a large part in shaping its policies and organizing its records and accounting procedure. At various times Mr. Cobb was active in numerous associations connected with the oil and gas industry.

H. R. STERRETT

Harold Reid Sterrett, president and director of the New Haven Gas Light Company until his retirement last year, died April 28th at the age of 53. He had been ill for two years.

Mr. Sterrett was born in Philadelphia and was graduated from the University of Pennsylvania in 1911. Before going to New Haven as manager and vice-president of the utility company in 1929 he had been an executive of the Philadelphia Gas Works, and Counties Gas & Electric Company of Ardmore, Pa., and of the Des Moines (Iowa) Gas Company. He had been a vice-president of the Connecticut Coke & Gas Company, and president of the New England Gas Association and of the Midwest Gas Association.

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GARMENT PRESS BOILERS
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THE GOODMAN STOPPER
Now has the "Z" handle for easy manipulation. When locked in place it holds. Stopper cannot slip. Gas cannot pass. Adjusted in 30 seconds.

Ask for circulars on this and other distribution equipment.

Nearly a half century of service to the Gas Industry.

GOODMAN — USED SINCE 1897 — Z "HANDLE & LOCKING SLEEVE — GAS MAIN STOPPER

The Reliable Shut-Off for Street Mains

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, New York

Modified Production Requirements Plan

Because standard applications under the Production Requirements Plan have been simplified by new instructions, use of the special PD-25X application blank for firms with an annual business of less than $100,000 a year will be discontinued after May 23.

The PD-25X application, known as the Modified Production Requirements Plan, was designed to reduce the paper work required from small manufacturers applying for priority assistance under PRP.

The new instructions for filling out the regular PD-25A application permit applicants to leave a considerable number of the columns blank, and thus reduce the amount of information required. A further simplification of Form PD-25A is being studied, and may be put into effect for subsequent quarters.

The use of the special form PD-25X is therefore no longer considered necessary, and no new PD-25X applications will be accepted after May 23. Preference ratings which have been assigned on that form may continue to be used until the end of the current calendar quarter. Applicants who have used Form PD-25X in the past should now apply on Form PD-25A, as simplified.

Roever Enters Coast Artillery Service

William A. Roever, Sales Engineer since 1937 for Clark Bros. Co., Inc., compressor manufacturer, first at the Dallas and later at the Houston branch office, has recently been called to military service at Camp Wallace, Texas. Entering

William A. Roever

service as a member of A Battery, 31st Artillery Training Battalion, since April 15th he has held the rank of Adjutant on the Battalion Staff.

Lieut. Roever's background of engineering and his years in artillery service have constituted an ideal preparation for his present work.

Air Conditioning Committee Enlists Utility Company Aid in Gathering Field Data

In order to obtain as complete information as possible on gas summer air conditioning equipment, the American Gas Association Joint Committee on Air Conditioning is now enlisting assistance of a widespread number of utilities to submit their field performance experiences on existing and new installations. The purpose of this request is to consolidate all factual knowledge and any information that can be useful to manufacturers of such equipment as well as for charting the research program now under way at the American Gas Association Testing Laboratories.

As pointed out by Mr. Leon Curusoff, Engineer of Utilization, Washington Gas Light Company, and Chairman of the Joint Committee on Air Conditioning, it is not sufficient to obtain scattered information as has been done in the past. To draw constructive conclusions data should be uniformly reported and be available from various localities with different climatic and other conditions. With this in mind the committee has prepared typical field test data forms. These have been distributed to representative gas companies but they are also available to any company desiring to participate in this work.

Further information and copies of the summer air conditioning field test data forms may be obtained by addressing Mr. R. M. Conner, Director, American Gas Association Testing Laboratories, 1032 East 62nd Street, Cleveland, Ohio.

Lone Star Gas Company Makes Rate Reduction

Natural gas service rates in towns served by Lone Star Gas Company pipe line, with headquarters in Dallas were reduced effective with meter readings of May 15, as the result of a voluntary agreement between the company and the Federal Power Commission. After several conferences with the federal commission and members of the Texas Railroad Commission President D. A. Hulcy, with approval of the directors, consented without further hearing to reduce Lone Star Gas Company's gate rate from 40 cents to 30 cents per thousand cubic feet. The agreement carried a provision that the reduction would be passed on to domestic and commercial customers of the various distribution companies.

In announcing the reduction which was based on a voluntary agreement, Mr. Hulcy stated that one of the chief reasons for this action was his desire and the desire of other officers of the various companies to dispense with further extended litigation and to put all possible effort into winning the war.

The amicable settlement ends rate controversies extending over a period of more than 10 years.

Industrial Rubber Conservation

A 48-page illustrated book on conservation of rubber products in industry has been published by United States Rubber Company, Rockefeller Center, New York.

Complete and explicit suggestions are given for the proper care of important rubber products from initial design through inventory and storage to use, maintenance, inspection and repair.

The book, First Aid to Industry in Conserving Rubber, is completely indexed and all mechanical rubber goods are included, such as, hose of all types; transmission, conveyor and elevator belts; mechanical packings; electrical tapes, wires and cables; molded and extruded rubber goods; rubber lined equipment; rubber mountings, mats and matting; printing materials; and rubber bonded grinding wheels.

Copies of the book are being mailed immediately to more than 50,000 engineers, plant managers, superintendents and others responsible for production and maintenance in American industries in all parts of the country, and other copies will be available on request.

Book Review

"Lessons In Practical Arc Welding" by Chaffee. 188 pages. 1942 copyright. Paper cover. Published by Hobart Trade School, Inc. 75c per copy. Special prices to schools.

This book contains the complete series of 41 arc welding lessons offered at the Hobart Trade School. Chapter headings include Preliminary Instructions; Starting & Manipulating the Arc; Welding Common Joints With Bare Electrodes; Welding Light Gauge Sheets with Coated Electrodes; General Welding With Coated Electrodes In The Flat—Horizontal—Vertical—Overhead Position; Pipe Welding; Welding Cast Iron; Special Practice & Tests. Text also contains a suggested classroom procedure and ready reference index.

The author has explained the fundamentals of arc welding in a simple and easily comprehensible manner.

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Motor Transport

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worn they can be plated to any desired thickness to compensate for the wear. Thus, two new joints, a minimum amount of welding wire and plating material suffice to reclaim an entire propeller shaft assembly.

2. A crankshaft, so worn at main or connecting rod bearing surfaces that a regrind to a smaller available standard size is impossible, need not be scrapped. The mechanic who is familiar with the process known as metal coating can reclaim the shaft with excellent results. This process has many possibilities in the automotive field for the purpose of replacing worn materials. Only a few simple rules must be followed to assure complete success. Sprayed parts must not be stressed excessively. There should be no fatigue cracks in the foundation to be sprayed. Preparation of the foundation should assure keying and dovetailing deep enough to withstand any mechanical pressures involved. The foundation material must be clean and free from oxides, oil, dirt and water. The sprayed metal must be atomized finely to insure the molten particles being small enough to penetrate the openings in the prepared foundation. Preparation of the foundation is accomplished by blasting with a special grit or machining with special tools. Hardened surfaces must be removed before preparation.

The worn bearing areas should be ground to the desired depth to assure uniform thickness of the finished sprayed material. The undercut surface is then shot blasted or machined. The prepared area is sprayed with the metal selected and the coated area is then finished by grinding or machining to the required size. By this method an expensive crankshaft may be reclaimed and brought back to its original dimensions at one-third the cost of a new shaft.

3. Valve faces, after several grindings, may lose enough material to reduce the valve-head dimensions to the point where they seat too low in the cylinder head or block. Hard surfacing materials can be welded to the valve face in much the same manner new aviation valves are made. This method of reclamation restores the valve to its original dimensions and provides a hard heat-resistant face.

FOR SALE!

Gas making plant consisting of washer, scrubber, generator, seal, and motor driven coke conveyor.

Further details will be furnished upon request.

Address all correspondence to

YORK ICE MACHINERY CORPORATION

York, Penna.

Attention:
MR. J. A. HOUSER

WANTED

New or used Steel Tank Gas Holder 50,000 to 100,000 cu. ft. capacity.

Write Box 125 c/o American Gas Journal, 53 Park Place, New York City.

Marketing Problems

(Continued from page 33)

veloping new markets, such as just referred to, providing this step proves to be economically feasible all factors considered.

In those cases where the civilian consumer market in an existing community has been considerably expanded due to the demands of war the problem may be somewhat different. The distributing company may be already serving the community, but not be in a position to take on a substantial increase in volume because of the limitations of existing supply and facilities. However the pressure from the community may be such that the demands for additional service cannot be ignored on account of jeopardizing the good will now enjoyed. A nice public relations problem may, therefore, develop if the community cannot be adequately served (due to conditions entirely beyond the control of the distributing company) materials cannot be secured, or priorities are too low to be in any way effective, in some cases, in meeting the community's demands.

In the commercial and industrial market the problems may be those due to diversion of supply from commercial customers to industrial customers or from industrial customers to industrial customers manufacturing highly important war materials. Here high priorities probably can be obtained to materially facilitate the provision of materials for such new facilities for distribution as may be required for the war effort.

Problems of the Sales Organization

The various sales organizations of the companies comprising the natural gas industry may be confronted now with many of the problems of industrial sales organizations previously discussed. If such is the case I hope that some of the solutions of these problems that others have evolved will provide a clue to the solution of some of your own problems.

Specifically I think you should consider retaining the best three-fifths, or at least a good nucleus of your sales organization. Utilize such of them as conditions warrant, in aiding customers towards better and more efficient utilization of natural gas if you have now a diminishing supply or are confronted with rationing of the available supply.

Use some of the men to support and promote your public relations program; so that your customers have an intelligent and sympathetic understanding of those problems that affect their interests. Have some of the men keep in close touch with selected customers to ascertain those problems and difficulties that arise from policies you have had to adopt under war conditions. Use some of them to keep in close touch with the accounts, that constitute the back bone of the business, and promote strong relations. Some of the salesmen perhaps can be used to secure the essential data relating to shifting markets, so that plans can be evolved to deal with this situation. They can also be used to gather essential data with respect to probable post war marketing conditions as a basis for post war planning. You are going to need a good, alert, well trained sales force after hostilities have ceased, even though you may not need them for actual sales work now. So overhaul your training plans and programs with a view to training the salesmen to meet and confidently deal with probable post war marketing conditions. I recommend that you ascertain, if you do not now have the data, how the salesmen utilize their time. Determine by groups, top third, middle third, and the bottom third, the relative proportions of their time utilized on productive work, i.e. actual selling. Determine the remaining time for such activities as travel, waiting to see customer, or prospect, dealing with complaints, etc. You will be amazed by what you find if the job is properly done. You will obtain also data for constructive use in sales training programs.

Many of the suggestions previously discussed with respect to salesmen's transportation, territories and their compensation probably can be applied, with suitable modification, to your individual problems in these fields.

Advertising

I do not believe you should discontinue your advertising. I do think you will need to change its emphasis. To utilize it to aid your customers in better utilization of your products; to inform them as to why you have had to adopt policies and practices that affect them, perhaps adversely. You should determine what you can do, how you can do it to help your customers and prospects. The surest way to ascertain what your customers' new problems are, under existing conditions, is to go and visit them. Then use your advertising to assist in solving one of the more important customer relations problems that develops from your visits with them.

Use your advertising as a morale builder not only for your customers but for your own organization. Resort to institutional advertising, focusing attention on the industry, on your own business, what has been accomplished, what you hope to accomplish, with a view to keeping the industry and its component parts ever before the public pending the time when you will need them and they will need you.

Post War Planning

I think you should make it some key man's responsibility to head up post war planning activities, with a view to collecting the essential information as to what the probable post war marketing and distribution problems are likely to be. The management then can review tentative plans that have been evolved to deal with probable post war situations and conditions and take a hand in evolving the final plans and the policies that will have to be promulgated. As has been previously pointed out the post war demand for many types of goods is going to be enormous, so do not be caught without a plan and policies, even inadequate or incomplete plans are better than no plans. Far sighted management of many businesses are doing just what I have outlined above and consider it so important that in several cases an officer of the company heads up this activity. They consider it important for two reasons:

(a) That for the preservation of the institution of private industry and American way of life, industry and business must meet the challenge and be prepared to go ahead with full steam after the war based on previously prepared plans

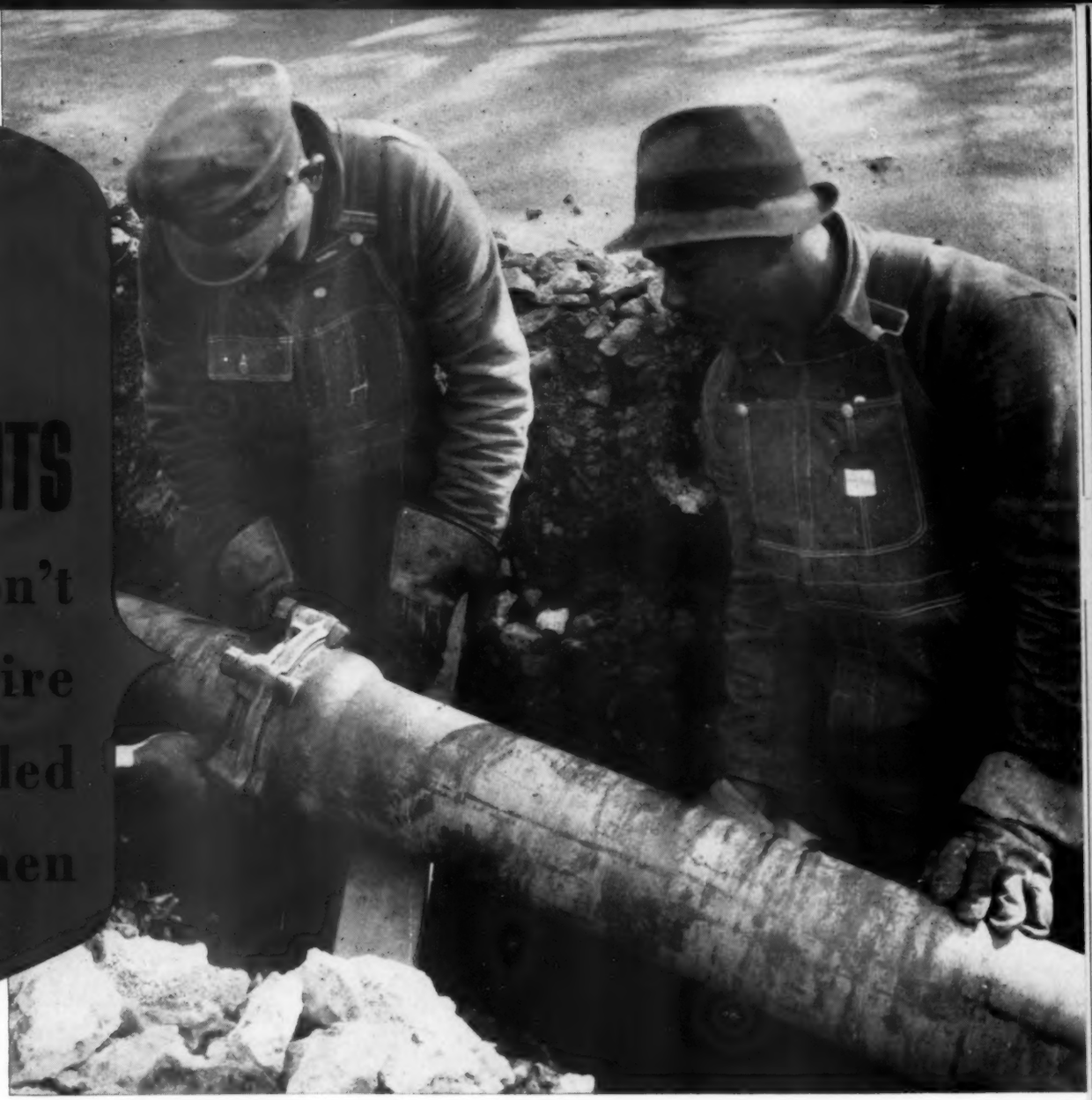
(b) That for individual survival they must have plans, policies and programs and cooperate with groups that are working on industry post war plans as a whole.

So be prepared to do your part and do it the way the gas industry has a reputation for doing it.

Presented at A. G. A. Natural Gas Convention, New Orleans, La., May 4-6, 1942.

HUGHES PRINTING CO.
EAST STROUDSBURG, PA.

JOINTS that don't require skilled workmen



TRAINED MEN are not needed to construct a gas line with mechanical joint cast iron pipe. You can do the job with a "green" crew. Any able-bodied man without previous experience can quickly become expert in assembling the bottle-tight mechanical joints made by C. I. P. R. A. members. They vary in design but are based on the same time-tried principle and all are bottle-tight under all operating pressures.

Pipe bearing this mark is cast iron pipe

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Available in diameters from 1¼ to 84 inches.

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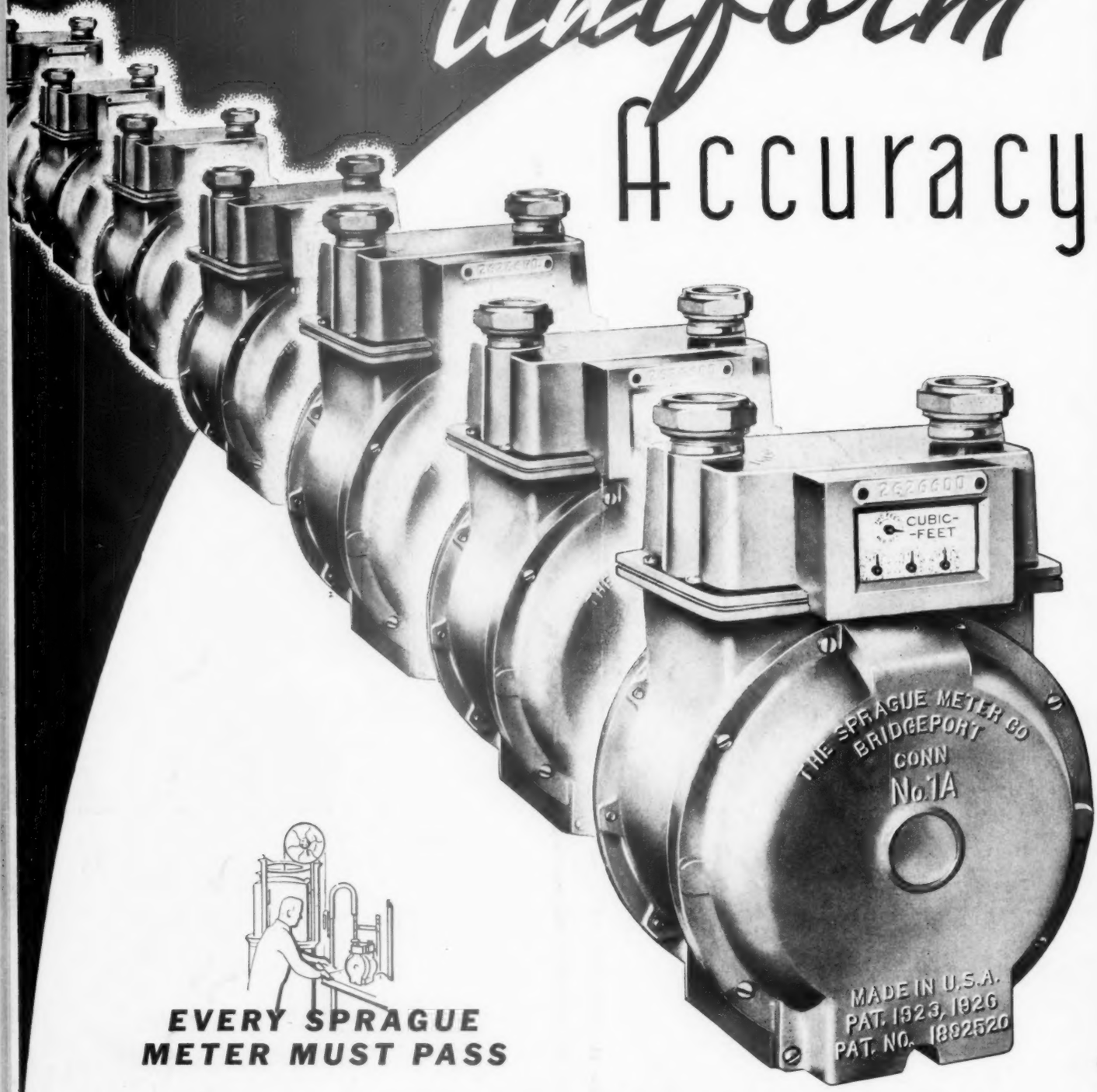
Uniform Accuracy



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